Meeting of the Academic Senate
Tuesday, April 30, 2019
UU 220, 3:10 to 5:00 pm

I. Minutes: Approval of April 9, 2019 (p. 2)

II. Communication(s) and Announcement(s): none.

III. Reports:
A. Academic Senate Chair: No Report
B. Provost: No Report
C. Vice President for Student Affairs: (p. 3)
D. Statewide Senate: (pp. 4-39)
E. CFA: (p. 40)
F. ASI: (p. 41)

IV. Special Reports:
A. [Time Certain 3:30pm] President’s Report: Cal Poly President Jeffrey Armstrong
B. [Time Certain 4:00pm] MPP Report: President Jeffrey Armstrong, Cindy Villa and Victor Brancart, Administration and Finance

V. Consent Agenda:
A.

<table>
<thead>
<tr>
<th>ITEMS TO BE CONSIDERED BY ACADEMIC SENATE</th>
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<tbody>
<tr>
<td><strong>Program Name or Course Number, Title</strong></td>
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<tr>
<td>(existing course proposed to be offered online)</td>
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<tr>
<td>CM 424 Construction Technology (1-6), 1-6 activities</td>
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<tr>
<td>(offer course online with topic ‘Technology, Society, and the Built Environment’, 2 units)</td>
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VI. Business Items:
A. Resolution on the Campus Chick-Fil-A: Thomas Gutierrez, Academic Senate Vice Chair, first reading (pp. 42-43)
B. Resolution on University Faculty Personnel Policies Chapter 6: Evaluation Cycle Patterns: Ken Brown, Chair, Faculty Affairs Committee, first reading (pp. 44-49).
C. Resolution on Graduate Blended Program Policies: Brian Self, Academic Senate Curriculum Committee, first reading: (pp. 50-55)

VII. Discussion Item(s):

VIII. Adjournment:
Meeting of the Academic Senate  
Tuesday, April 9, 2019  
UU 220, 3:10 to 5:00 pm

I. Minutes: M/S/P to approve of March 5, 2019 and March 12, 2019 Academic Senate minutes. Two abstentions.

II. Communication(s) and Announcement(s): None.

III. Reports:
A. Academic Senate Chair: None.
B. Facilities: David Korpan, Director of Environmental Health and Safety, reported on the current procedures for fire drills and asked the Senate for their feedback as to how to improve to process for the following years in order to minimize classroom impact.
C. President’s Office: None.
D. Provost: None.
E. Vice President for Student Affairs: None.
F. Statewide Senate: Jim LoCascio, Statewide Senator, reported that they have created ten courses for CID and four model transfer curricula for engineering to meet SB14-40, which was passed in 2010 to help streamline transfer students, and are awaiting approval from the Chancellor’s Office. Gary Laver, Statewide Senator, shared the names of the nominees for faculty trustee: Dr. Romey Sabalius from San Jose State and Dr. John Tarjan from CSU Bakersfield. He also reported the resolutions on infringement on faculty intellectual property and the 2020 bond proposition were passed.
G. CFA: Lewis Call, CFA SLO Chapter President, reported that the Cal Poly campus will be moving towards a permit-less staff parking system which will likely be implemented in Fall of 2019. He also reported there will be a 2.5% general salary increase effective July 1st, 2019.
H. ASI: Mark Borges, ASI Board of Director’s Chair, reported that ASI has secured club funding for the rest of the academic year and encouraged the Senate to promote student participation in the upcoming ASI elections. Jasmine Fashami, ASI president, shared her experiences traveling to Washington DC as a part of the CSU hill day event, as well as announced ASI’s receiving of a $50,000 donation from the Grant family to promote voter registration on campus for the next two years.

IV. Special Reports: None.

V. Consent Agenda:
A. The retirement of Resolution AS-251-87/PCC- “Close Relative” was approved by consent.

VI. Business Items:
A. Resolution on Template for General Education 2020: Gary Laver, General Education Governance Board, proposed a new template for General Education in compliance with Executive Order 1100R. This resolution will return to first reading at the next Academic Senate meeting.
B. Resolution on University Faculty Personnel Policies Chapter 5: Evaluation Processes: Ken Brown, Chair, Faculty Affairs Committee, introduced a resolution that defines the types of evaluations that are permissible for faculty. M/S/P to move Resolution on University Faculty Personnel Policies Chapter 5: Evaluation Processes to second reading. M/S/P to pass the Resolution on University Faculty Personnel Policies Chapter 5: Evaluation Processes.
C. Resolution on University Faculty Personnel Policies Chapter 6: Evaluation Cycle Patterns: Ken Brown, Chair, Faculty Affairs Committee, presented a resolution on evaluation processes that lays out how faculty move towards promotion. This resolution will return in first reading status at the Academic Senate Meeting on April 30, 2019.

VII. Discussion Item(s): None.

VIII. Adjournment: 4:53 pm

Submitted by,  
Francesca Tiesi  
Francesca Tiesi  
Academic Senate Student Assistant

805-756-1258 ~ academicsenate.calpoly.edu
Paul Wesselman, the Ripples Guy, will be the keynote speaker at this June’s commencement. Paul speaks to all incoming students at the start of WOW, during the Big Fall Welcome, an event at Spanos Stadium. Paul will be able to bring the student experience full circle, back in the stadium, as our students celebrate their academic achievements. You can learn more about Paul at theripplesguy.com

The Strategic Plan Leadership Team (myself, Mary Pedersen, Bruno Giberti) continue to meet with the Budget and Long Range Planning Committee to finalize the plan per the resolution passed by Senate earlier this year.

Students that live on campus will be able to purchase parking permits that are valid from after the Memorial Day weekend through graduation, to assist with their ability to move-out of the residence halls and apartments.
Academic Affairs (AA) Committee April Meeting

AA Resolutions and White papers

8.1 AS-3360-19/AA - “The Impact of Artificial Intelligence (AI) on Higher Education”
   (Second Reading)
8.2 AS-3371-19/AA – “Endorsement of the Student Success White Paper 2.0 Process”
   (Second Reading)
   Susan Schlievert
8.3 Proposed resolution on “Endorsement of Engineering Model Curricula for Transfer to
   Receive the Same Special Benefits/Guarantees Upon Transfer to CSU as Model Transfer
   Curriculum (TMC)”
   (First Reading/Waiver)
   James Locascio

Other committee resolutions discussed

RESOLUTION IN OPPOSITION TO AB 1460/ SUPPORT OF SYSTEMWIDE ETHNIC
STUDIES REQUIREMENT

Items AA Discussed

9.1 Impact of AI on curriculum and on structure/delivery of education.
   Please review the White Paper on AI, and send all comments and suggestions for
   finalization to Senator Rodan.
9.2 As a follow-up to the CO response to our ASCSU White Paper on Student Success,
   AA will add to this White Paper with student perspectives on what student success
   means to them. Please send all campus student data to Senator Schlievert.
9.3 General Education (GE) Task Force Report
   Please review the GE Task Force Report, and be prepared to discuss it in committee.
9.4 Discussion of AB 1629:
   https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=201920200AB1620
Artificial Intelligence:

And its impact on Career Preparation, Reorientation and Lifelong Learning

April 2019

White paper sub-committee

Nola Butler-Byrd, San Diego State University
Simon Rodan, San Jose State University (lead author)
Susan Schlievert, CSU Fresno
Darlene Yee-Melichar, San Francisco State University

Academic Affairs Committee

Darlene Yee-Melichar, Chair, San Francisco State University
Susan Schlievert, Vice Chair, CSU Fresno
Nola Butler-Byrd, San Diego State University
Mary Ann Creadon, Humboldt State University
James G. LoCascio, Cal Poly San Luis Obispo
Janet Millar, CSU Bakersfield
Jeffrey Reeder, Sonoma State University
Simon Rodan, San José State University
Cynthia S. Trevisan, Cal Maritime
Gwen Urey, Cal Poly Pomona

The authors want to thank the a number of people who helped in the development of this white paper: Harlan Findley, Director People Operations, Google, CSU Trustee Peter Taylor, Gary Radine, CEO Delta Dental (retired), Michael Berman, CTIO, CSU Office of the Chancellor, and members of the ASCSU.
Prologue
“Last year, I began getting fundraising cold calls. The caller would always start the conversation ‘I’m so glad I reached you. You know, you're harder to get hold of than my gran-kids’’. The spiel continued in this somewhat folksy fashion. After three or four calls, when it was clear that the script and the voice were exactly the same each time, I began to wonder whether I was actually talking to a person. It seemed unlikely that a) the fund-raising organization had only one person making calls, or b) that all the people making calls sounded exactly alike or c) that by chance I was contacted by exactly the same person four times in a row over the course of six months. That started me wondering if in fact I was actually interacting with a computer program, an AI application with speech recognition capability and a limited ability to comprehend meaning that was guiding its responses and questions. So when I recently received another similar call, I decided to ask. The conversation went something like this:

I am doing research into artificial intelligence, and I hope you don't mind my asking, but are you a person or a robot?

"I am a live agent but I am using pre-recorded responses".

Thanks, but that doesn't quite answer the question: are you a robot or a person?

"I am a live agent but I am using pre-recorded responses".

I really don't think that unambiguously answers my question. So, are you a robot or a person?

"I'm sorry I don't understand the question. Let me get my supervisor".

Alan Turing suggested that the test of machine intelligence\(^1\) is when a human could no longer tell that she was interacting with a machine. If indeed I was talking to an artificial intelligence application on those calls, it seems to have passed Turing’s test.”

\(^1\) https://en.wikipedia.org/wiki/Turing_test
Introduction
The CSU, as an institution, fulfills a variety of societal needs. It imparts knowledge, both broad and discipline-focused. It broadens minds, prepares students to think carefully and critically about the world and to play an engaged role in civic life. It helps students transition from the directed learning they had in high school to help them become self-directed learners for life. It helps students if they are sick or hungry. It provides financial support to those in need.

Understanding that the CSU plays a very broad role in the lives of the students it admits, this white paper focuses on just one aspect of the university's mission: to provide opportunities for individuals to develop professionally and prepare significant numbers of educated, responsible people to contribute to California's economy. Simply put, professional development and contributing to California's economy is about helping students find jobs. And while this is only one aspect of the CSU's mission and understanding that higher education is more than just professional development, it is one that understandably matters a great deal to our students.

This paper draws on research into the way the careers may be affected by artificial intelligence and then speculates as to what these changes might mean for the various ways in which the CSU as an institution serves its students.

It should also be noted that in some areas the CSU may not currently be adequately resourced to fulfill the kind of role the paper speculates might be needed. However, these suggestions are intended as a starting point for deeper consideration at the end of which, if it is concluded that some areas of the institution’s operation require additional resources, then decisions about resource allocation may be better made, both within the CSU and at the California State level.

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4 https://www2.calstate.edu/csu-system/about-the-csu/Pages/mission.aspx

Deleted: Executive Summary
Artificial Intelligence (AI) is advancing rapidly and is set to transform a significant proportion of jobs in the 'knowledge economy'. According to a 2015 study by McKinsey, a management consultant, “as many as 45 percent of the activities individuals are paid to perform can be automated by adapting [then] currently demonstrated technologies”. That figure rises to 58 percent with modest advances in natural language processing. Another study predicts that 47 percent of US jobs are at risk of being replaced by AI.

While previous waves of automation have generally affected manual work leaving cognitive tasks relatively unscathed, AI is likely to have as great if not greater an impact on white collar as blue collar jobs. Some of those will almost certainly be jobs for which universities like the CSU are currently preparing their students.

Advances in AI are likely not only to change the nature of many jobs, but also to accelerate the rate of change in workforce requirements, meaning that in some instance the workplace preparation we provide to our students will have a shorter 'half-life'. The approach adopted over the last 30 years or so in response to the transition away from manual work to knowledge work has relied largely on extending education, requiring young people to stay in school for longer and encouraging ever higher proportions of high school graduates to complete associate and bachelor's degrees. But we cannot continue indefinitely to ask that the amount of education people take early on in life increases while at the same time the half-life of that learning contracts.

Aside from any curricular changes AI will require, it seems likely that institutions like the CSU have an opportunity to play a larger role in the lives of Californians both in supporting their careers and outside.
How AI is Changing the Employment Landscape

Artificial intelligence (AI) might be thought of as the ability of a machine to make inferences and choices by learning from large quantities of data. It can predict what movies we are likely to want to see on Netflix, what products we will want to buy on Amazon, and what advertisements might appeal on Google. AI recognizes objects and people, steers self-driving cars, detects uncharacteristic spending patterns that might signal fraudulent activity on our credit cards, and chooses what items to show us in our social media feeds. It might even be persuading us to make donations to charity.

It has been over 20 years since Deep Blue, an IBM chess-playing computer, beat chess grandmaster Gary Kasparov. The victory of ‘AlphaGo’, an AI program developed by Google, over the world’s top Go player provides more recent, and perhaps more compelling evidence that AI can solve highly complex strategic problems of a kind that had been considered analytically intractable and therefore amenable only to human intuition. Activities that require computation and the application of knowledge will almost certainly be supplanted by AI; and it is no longer just routine repetitive information processing tasks that AI will replace. White-collar jobs requiring years of training could, in the not-too-distant future, be performed by a computers, possibly with greater accuracy than by humans. By way of example, medical diagnostics, once considered a job that required years of experience and human judgment, is becoming much more automated. More importantly perhaps, in addition to mimicking human judgment that some would say is as much art as science, AI may soon prove to be capable of a variety of creative tasks. As BusinessWeek recently reported, AI is beginning to generate creative artifacts that could easily be mistaken for the work of little known Impressionists.

In a 2015 study by McKinsey designed to better understand AI’s impact in the workplace, the authors looked not at jobs but at the activities within them. In summarizing their findings, the authors noted that: “about 60 percent of all occupations have at least 30 percent of activities that are technically automatable, based on currently demonstrated technologies”. The impediments to a significant degree of automation in white collar jobs are institutional rather than technological.

The extent of the disruption AI will bring about is perhaps unprecedented not only in its scale, but in the speed with which change may occur. Google’s Director of Strategic Planning for People Operations, Harlan Findley, believes it quite possible that self-driving trucks will replace

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1 https://www.scientificamerican.com/article/20-years-after-deep-blue-how-ai-has-advanced-since-conquering-chess/
all manually-operated long-haul trucks within two to three years. The revenues per employee of ‘digital’ firms like Google, Amazon, Facebook is three times that of firms operating principally in the physical domain13. In part, this is a function of the non-rival nature of software and computer algorithms. Only a few people are needed to write a program that The World Economic Forum’s “The Future of Jobs Report”14 presents a variety of indicators showing how the world of work is likely to change for in the next five years. It notes that “no less than 54% of all employees will require significant re- and up-skilling” by 2022, suggesting a rapid rate of change in the workplace.

This is only a very brief account of the way AI is changing the employment landscape. If the jobs that landscape comprises are changing, so are career paths. This has implications both for what preparation we should be providing for our students to meet their short term goals, and how institutions of higher education such as ours might support them in the longer term over the entire course of their lives. Indeed as a state institution there may be things the CSU can provide that no other entity would be able or willing to.

Implications for Higher Education

Higher education is likely to be impacted by the changing natures of jobs in the knowledge economy in three ways. First, some programs may need to alter what they teach to continue to properly equip graduates for the job market as the nature of work changes. Second, new technologies may change the way education itself is delivered and the balance between the public and private sectors. And third, as the nature of work evolves ever more rapidly, the need for people to go back to further their education, either for professional reason or for personal growth, will occur at more frequent intervals over the course of their careers.

Career Preparation

Since jobs may comprise activities that are differently vulnerable to replacement by AI, not all programs will be equally affected. For example, while some aspects of medicine may soon be transformed by AI, other programs, such as a BA or MA in Art History and Visual Culture or a minor in Ancient and Medieval History, may be less affected. If they are not already doing so, faculty might begin to consider which of the activities they are helping their students master are most susceptible to AI replacement, and thus how their programs may need to change and adapt. Indeed, in a worst case, some of the jobs in which their graduates find work may disappear completely. By the same token, we need to be aware of emerging new fields and create programs that meet those new needs as they arise. Business Analytics is a recent example of a program that recently came into existence in response to technological change. Program planning processes should be forward-looking rather than simply an extrapolation of past trends. Career preparation involves both adapting existing programs and creating new ones in response to evolving


14 https://www.weforum.org/reports/the-future-of-jobs-report-2018
technological trajectories. While this should best be left to faculty on individual campuses, the CSU might be able to facilitate change and curricular innovation by helping sharing of best practice and providing resources that accelerate locally inspired curricular transformation.

AI in Educational Delivery

Enthusiasm for technology-based alternatives to the traditional model of faculty and students interacting in relatively small groups continues unabated. Amid calls for cost savings and greater efficiency, the allure of new technology seems to appear irresistible to many outside the profession. Online solutions per se don’t necessarily change the cost model, but when AI is harnessed to allow classes of hundreds or thousands of students, the educational landscape changes dramatically. While the Udacity experiment at San José State was widely regarded as unsuccessful\(^\text{15}\), the promise of “something for next to nothing”, leveraging new technology to reduce the cost of delivering education by an order of magnitude, remains. Anticipate renewed calls for MOOCs\(^\text{16}\), supported by AI tools to “assist” in tasks like grading large numbers of papers or blockchain-based micro-credentialing where elements of a few hours each are “assembled” by the student-consumer into self-directed tailor-made qualifications. There will be no shortage of for-profit entrepreneurial start-ups\(^\text{17}\) looking to bring new (untested and unregulated) educational offerings to venture capitalists for funding and to the market as an alternative to more institutionally established models.

Nevertheless, one should not dismiss the potential of AI to assist faculty in their mission. Useful applications of new AI-based technologies and tools are likely to emerge. The challenge higher education faces is in the judicious adoption of novelty. We should consider the ways in which AI might augment and enhance teaching. The CSU faculty is best placed to investigate, develop and carefully experiment with the ways in which AI might help faculty members in their jobs and help students develop skills, gain knowledge, and become better critical thinkers.

Beyond the Classroom - Career Reorientation and Lifelong Learning

In addition to career preparation and educational delivery, a third implication of the changes AI will usher in relates to the accelerating pace of workplace change. In addition to reconfiguring, eliminating or creating new jobs, AI may not cause just one discrete discontinuity in the labor market, but become a permanent driver of continuous change. Jobs may no longer remain stable in terms of their activities over the span of a person’s working life; they may appear, change or disappear in a matter of years rather than decades. This increasing rate of change may affect the longevity, the “half-life”, of the knowledge and capabilities students acquire as they earn their degrees. Student success\(^\text{18}\) is about more than the proportion of incoming students who complete their degrees and how quickly and efficiently they graduate. Can the CSU as an institution play a more active, useful and ongoing role in students’ lives after they graduate from our bachelor’s

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\(^\text{16}\) Massive Open Online Course

\(^\text{17}\) e.g., [https://odem.io/images/ODEM.IO-Technical-Whitepaper.pdf](https://odem.io/images/ODEM.IO-Technical-Whitepaper.pdf)

and master’s programs? Can we be better partners in our students’ lifelong-learning journeys?

One implication of the shorter half-life of certain sets of knowledge may be that higher education beyond a four year degree may need to be more granular. Shorter knowledge half-life changes the cost-benefit calculations students make when considering a degree program. Prospective students may calculate that the likely time over which they can exploit the benefits of a four or even a two year program is too short to compensate for the cost. In cases where large ‘chunks’ of education (120 unit bachelor’s or 48 unit master’s programs) are no longer ideal, lifelong learning may involve many more frequent but much smaller dips into the well of knowledge. For example, many much shorter ‘micro-certificate’ programs may be more appropriate in such instances19. Smaller “chunking” not only reduces the up-front cost, but affords greater flexibility and would allow students to build their education in as their need for knowledge changes and evolves.

Whether career reorientation and re- and up-skilling are accomplished in many small bites at the apple or whether it is swallowed whole, the CSU might play an increasing role in student success and lifelong learning by providing our alumni not only with access to whatever new knowledge they need, post-graduation, but with counseling on what courses they might best choose and help with making the choice to come back for additional education. Where careers are disrupted by AI, requiring frequent pivots and substantial re- and up-skilling, lifelong learning will be an increasingly important part of our students’ working lives. Indeed a study published by the McKinsey Global Institute suggests that re- and up-skilling aren’t enough. “Instead, employers, employees, educational institutions, and public-sector leaders need to start talking about ‘lifelong employability’: helping people continually and successfully adapt as the economy evolves20.”

While we talk frequently about lifelong learning, often that means trying to provide students with the skills and mindset in their bachelor’s degrees that we hope sets them up to learn independently as they progress through their careers. But another way of thinking about lifelong learning is that we continue to engage with students in several ways after they graduate. Here we suggest three things that the CSU might consider: expanding the work of our career centers, building a more vibrant and active alumni network and providing knowledge in a more granular fashion.

Career Centers

The CSU might provide lifelong career services. Currently students only have access to Career Center services for a year after graduation. This is not uncommon. “One of the flaws of the American higher-education system is that once you cross the graduation stage, we largely sever

the relationship with you—with the exception of viewing you as a donor21”.

Moving forward, a Career Center’s role might be expanded in two ways. The easiest is that it continues to provide advice to students and connect them with potential job opportunities throughout their working lives rather than just as they leave the University. When students find themselves at a career discontinuities, Career Centers, in addition to helping them find another job, might also provide advice and guidance on re- or up-skilling. In conjunction with academic advising, Career Centers could help students better understand the evolving employment landscape, help them think through different alternatives, suggest suitable programs (masters, bachelors, certificates or micro-certificates), and help them evaluate the costs, benefits and risks associated with each.

More fundamentally, as a society we may need to change the way we think about who we are; currently we tend to ascribe identities, to ourselves and to others, based on a profession and often, by extension, our educational specialization (e.g. electrical engineer, computer scientist, accountant, and art historian). This makes moving from one domain to another seem more daunting than it might actually be. For example, an English major, with an understanding of the structure of language, may find a transition into programming, with its syntactic rules, less traumatic than were they to try to take up accounting as a new career. Understanding peoples’ skills and experience at a more granular level might help career counselors ease people, whether freshly-minted graduates or alumni looking to pivot from their current career path, onto a new trajectory. It might also require rethinking the way we pigeonhole and categorize ourselves as a society, though that is a much more daunting cultural challenge. Using a more granular task-oriented approach in career counseling (much as McKinsey did in their 2015 study) might increase the ease of transition between jobs and careers and help them achieve long term success.

The Alumni Association

At the risk of stating the obvious, the lifelong learners we often talk about are also our alumni. Many universities have developed vibrant alumni communities. While alumni associations are often seen important for fundraising, an engaged alumni network provides its members with communities of shared professional interest and a network of potential access to career opportunities. A lively alumni network would provide a channel through which the CSU could reach students to help them with career choices and the educational opportunities the CSU offers as their careers evolve. This, in conjunction with the expanded role of the Career Centers, would allow the CSU to continue to support student success over the course of their careers. The CSU might therefore consider investing additional resources in developing a more robust alumni network, perhaps with communities centered on campuses, colleges or programs and disciplines to create a sense of identity and deliver tangible value.

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Rethinking educational granularity – from one-time fire-hose to on-demand drip-feed

Currently, we generally deliver education in one almost continuous block from kindergarten through graduation, either at the bachelor’s or master’s level. There are two drawbacks with this model. First, some of the knowledge acquired in that block will be out of date before it is needed. Second, some knowledge may not seem relevant at the time it is delivered and so will make less of an impression than were it acquired once its utility had become clearer. Being told how to deal with a problem I’ve not yet faced may be interesting; finding out how to solve a problem I’m struggling with is compelling. For example, teaching ideas about strategic management to 19-year olds may be premature given that they may not be in a position to worry about these kinds of issues for another twenty years or more. And, because they have never encountered these kinds of questions, these ideas may seem (and indeed may be) of little immediate practical value.

Could we then re-imagine education if we think of it as being a lifelong commitment both on the part of the students and the educational institution? If, once enrolled, the CSU committed to remain actively engaged with each of its students for life, the urgency of delivering everything all at once goes away. A learning plan could be developed for each student that matches the delivery of particular content to the evolution of their careers, a plan that evolves as they progress along their chosen career paths. Lifelong learning wouldn’t then, post-graduation, be left to the student to make good on; it becomes a shared endeavor, in which the University plays a role. The CSU in this model becomes, in part, a curator of a lifelong learning community, guiding students in their acquisition of knowledge and skills with relatively few geographic and disciplinary boundaries.

Conclusion

AI is set to transform the employment landscape. The ASCSU believes that at the program level, faculty should begin to consider the way AI may alter the set of skills students develop. At the campus level, the anticipated changes create an opportunity for the CSU to contribute to student success in a variety of ways: for example, by cultivating ongoing engagement between our students and alumni with the CSU, and by augmenting ancillary service such as career centers and academic advising so that these services might be offered in perpetuity to those who we help educate. And at the system level, there is an opportunity to gather and disseminate information and on new AI-based tools, to provide a locus for collective learning about their use and efficacy, and to use the System’s bargaining power to provide commercial tools to students and to the faculty at as low a cost as might be negotiated.

22 With thanks to Michael Berman, Chief Technology Innovation Officer, CSU Office of the Chancellor for this idea.
Appendix

Some AI-related quotes:

“If a computer can do one-third of your job, what happens next? Do you get trained to take on new tasks, or does your boss fire you, or some of your colleagues? What if you just get a pay cut instead? Do you have the money to retrain, or will you be forced to take the hit in living standards? It’s easy to see that finding answers to these questions is incredibly challenging.” Technology writer James Vincent.

“Of the things that worry me about AI, job displacement is really high up. We need to make sure that wealth we create [through AI] is distributed in a fair and equitable way. Ethics to me isn’t about making sure your robot doesn’t turn evil. It’s about really thinking through, what is the society we’re building? And making sure that it’s a fair and transparent and equitable one.” Andrew Ng, co-founder of Google Brain and former chief scientist of Baidu.

“If you can dramatically increase productivity and make more goodies to go around, that should be a good thing. Whether or not it turns out to be a good thing depends entirely on the social system, and doesn’t depend at all on the technology. People are looking at the technology as if the technological advances are a problem. The problem is in the social systems, and whether we’re going to have a social system that shares fairly, or one that focuses all the improvement on the 1% and treats the rest of the people like dirt. That’s nothing to do with technology... I hope the rewards will outweigh the downsides, but I don’t know whether they will, and that’s an issue of social systems, not with the technology.” Geoffrey Hinton, computer scientist and “Godfather of Deep Learning”.

“AI will increasingly replace repetitive jobs. Not just for blue-collar work but a lot of white-collar work. Basically chauffeurs, truck drivers anyone who does driving for a living their jobs will be disrupted more in the 15- to 20-year time frame and many jobs that seem a little bit complex, chef, waiter, a lot of things will become automated, we’ll have automated stores, automated restaurants, and all together in 15 years, that’s going to displace about 40 percent of the jobs in the world.” Kai-Fu Lee, venture capitalist and an AI expert.

“I’m concerned about the concept of automation. Many jobs will be automated; a lot will be. This will have benefits for people but it also has a huge cost. I worry that ‘Made in America’ will become ‘Made by robots in America.’” Brian Chesky, co-founder and CEO of Airbnb.

“With regard to health care and education, I think there’s a huge ethical question for society at large. We could build those systems to complement and work with physicians and teachers, or we could try to save money by having them replace people. It would be a terrible mistake to replace people.” Barbara J. Grosz, the Higgins Professor of Natural Sciences at Harvard University and the first woman to serve as president of the Association for the Advancement of Artificial Intelligence.

23 https://www.cbinsights.com/research/ai-threatens-humanity-expert-quotes/
Endorsement of Engineering Model Curricula for Transfer to Receive the Same Special Admission Guarantees Upon Transfer to CSU as the Transfer Model Curriculum (TMC)

1. **RESOLVED**: That the Academic Senate of the California State University (ASCSU) urge the Chancellor’s Office (CO) to grant the four Engineering Model Curricula (MC) for Transfer the same admission status as the Transfer Model Curriculum (TMC); and be it further

2. **RESOLVED**: That the ASCSU distribute this resolution to

   - CSU Chancellor,
   - CSU Board of Trustees,
   - Karen Simpson-Alisca, Associate Director Undergraduate Transfer Programs and Policy,
   - CCC Chancellor,
   - CCC Board of Trustees,
   - Nick Langhoff, Chair of the Engineering Liaison Council California Engineering Liaison Council,
   - The Intersegmental Committee of the Academic Senates, California Community Colleges, California State University, and University of California,
   - California State Assembly Committee on Higher Education,
   - California Senate Education Committee,
   - CSU campus Presidents,
• CSU campus Senate Chairs CSU,
• Campus Senate Executive Committees,
• California State Student Association (CSSA), and
• Associated Students, Inc. (ASI) of the California State University
RATIONALE: Senator Alex Padilla’s AB-1440 was signed into law by Governor Schwarzenegger in September of 2010. “The Student Transfer Achievement Reform (STAR) Act would do the following: 1) Mandates that CCCs create AA degrees for transfer to a CSU with areas of emphasis. 2) Guarantees that students who earn the transfer degree are admitted to the CSU with upper division junior status. 3) Precludes CCCs from requiring additional courses for this degree. 4) Assures that transfer students will graduate with a bachelor’s degree with 120 semester units or 180 quarter units, with the exception of certain majors.” (Alex Padilla Fact Sheet: SB 1440 – PADILLA Student Transfer Achievement Reform Act).

The granting of engineering MC’s the same admission status as a TMC has the following benefits:

1. Students will take less units at the CCC before transferring to the CSU.
2. Students will require less units at the CSU to complete their engineering degree.
3. Academic Guidance Counselors at the CCC will have more incentive to be familiar with these MCs.
4. Students who enter ENGR 110 (Introduction to Engineering) will become familiar with the mathematics required for and engineering degree and the difference among the engineering disciplines.
5. The student completing a MC will have finished the required mathematics, chemistry, most or the required physics and some common lower division engineering classes.
6. Further benefits would be realized if the receiving CSU engineering department would create a “bridge semester/quarter” for their incoming transfer students. Cal Poly SLO has created a bridge quarter for the incoming fall transfer students. They are “blocked scheduled” into the mechanical engineering lower division classes that are unique to Cal Poly. This has the benefit of creating a cohort of students who become part of the mechanical engineering department and it gets them on track to complete their degree in less than five years.

In the spirit of AB 1400 Engineering faculty in the California State University (CSU) and the California Community Colleges (CCC) created Faculty Discipline Review Group (FDRG) consisting of three faculty members from each of the two Systems (CSU and CCC) and Discipline Input Group (DIG) in fall 2011. Two DIG meetings were convened: October 14, 2011 (Southern California) October 28, 2011 (Northern
California) to begin the process of developing Transfer Model Curriculum (TMC) for Engineering or the
transfer major and C-ID descriptors. Engineering faculty approved of 10 C-ID courses (https://www.c-
id.net/courses/search) for transfer.

After four years of meetings the following four engineering model curricula established:

CCC Major or Area of Emphasis:  Engineering – Accepted by ICFW 3.31.2015

CSU Major or Majors:  Engineering

Degree Type (indicate one):  AS

As there are different engineering disciplines, the Engineering FDRG has developed four discipline specific model curricula each MC contains 60 units and feeds into one or more majors at the baccalaureate level. The four discipline clusters are:

1. Mechanical, Aerospace, and Manufacturing
2. Civil
3. Electrical
4. Computer and Software

The engineering MC’s consist of three components, Fundamental Core, Engineering Discipline Courses and General Education classes. Colleges that are able to offer more than one option may want to consider presenting a core of courses common to the different discipline options. The MC’s consist of 25 units of Fundamental Core courses and depending the engineering discipline up to 22 units of Engineering Discipline Units. This leaves a minimum of 13 units of General Education course. Students are encouraged to complete A1 oral communication, A2 written communication, and choose from C1,C2,area D. It should be noted that most engineering disciplines at the CSU double count A3 critical thinking B4 math/quantitative reasoning.

The “Fundamentals Core” is indicated below.
Fundamentals Core Courses for Engineering Major: 25 units

<table>
<thead>
<tr>
<th>Course Title</th>
<th>C-ID Designation</th>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction to Engineering (2)</td>
<td>ENGR 110</td>
<td></td>
</tr>
<tr>
<td>Calculus I (4)</td>
<td>MATH 210 or 211</td>
<td>Area B4</td>
</tr>
<tr>
<td>Calculus II (4)</td>
<td>MATH 220 or 221</td>
<td></td>
</tr>
<tr>
<td>Calculus III – Multivariable (4)</td>
<td>MATH 230</td>
<td></td>
</tr>
<tr>
<td>Ordinary Differential Equations (5)</td>
<td>MATH 240</td>
<td></td>
</tr>
<tr>
<td>Physics – Mechanics (4)</td>
<td>PHYS 205</td>
<td>Area B1 and B3</td>
</tr>
<tr>
<td>Physics – E&amp;M (4)</td>
<td>PHYS 210</td>
<td></td>
</tr>
</tbody>
</table>

Required Engineering Courses by disciplines:

A. Mech., Aero, Manuf. Track (21-22 units)

<table>
<thead>
<tr>
<th>Course Title</th>
<th>C-ID Designation</th>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemistry – General Chem I (5)</td>
<td>CHEM 110</td>
<td></td>
</tr>
<tr>
<td>Circuit Analysis (3)</td>
<td>ENGR 260</td>
<td></td>
</tr>
<tr>
<td>Engineering Graphics (3)</td>
<td>ENGR 150</td>
<td></td>
</tr>
<tr>
<td>Statics (3)</td>
<td>ENGR 130</td>
<td></td>
</tr>
<tr>
<td>Materials Science and Engineering (4)</td>
<td>ENGR 140B or ENGR 140L</td>
<td></td>
</tr>
<tr>
<td>Programming and Problem Solving in</td>
<td>ENGR 220</td>
<td></td>
</tr>
</tbody>
</table>
### MATLAB (3)

Or

**Introduction to Programming Concepts and Methodologies for Engineers (4)**

<table>
<thead>
<tr>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGR 120</td>
</tr>
</tbody>
</table>

### B. Civil Track (21-22 units)

<table>
<thead>
<tr>
<th>Course Title</th>
<th>C-ID Designation</th>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemistry – General Chem I (5)</td>
<td>CHEM 110</td>
<td></td>
</tr>
<tr>
<td>Surveying (3)</td>
<td>ENGR 180</td>
<td></td>
</tr>
<tr>
<td>Or</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Circuit Analysis (3)</td>
<td>ENGR 260</td>
<td></td>
</tr>
<tr>
<td>Engineering Graphics (3)</td>
<td>ENGR 150</td>
<td></td>
</tr>
<tr>
<td>Statics (3)</td>
<td>ENGR 130</td>
<td></td>
</tr>
<tr>
<td>Materials Science and Engineering (4)</td>
<td>ENGR 140B or ENGR 140 + ENGR 140L</td>
<td></td>
</tr>
<tr>
<td>Programming and Problem Solving in MATLAB (3)</td>
<td>ENGR 220</td>
<td></td>
</tr>
<tr>
<td>Or</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Introduction to Programming Concepts and Methodologies for Engineers (4)</strong></td>
<td>ENGR 120</td>
<td></td>
</tr>
</tbody>
</table>

### C. Electrical Track (13 units)

<table>
<thead>
<tr>
<th>C-ID Designation</th>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 110</td>
<td></td>
</tr>
<tr>
<td>ENGR 180</td>
<td></td>
</tr>
<tr>
<td>ENGR 260</td>
<td></td>
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<tr>
<td>ENGR 150</td>
<td></td>
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<tr>
<td>ENGR 130</td>
<td></td>
</tr>
<tr>
<td>ENGR 140B or ENGR 140 + ENGR 140L</td>
<td></td>
</tr>
<tr>
<td>ENGR 220</td>
<td></td>
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<tr>
<td>ENGR 120</td>
<td></td>
</tr>
<tr>
<td>Course Title</td>
<td>C-ID Designation</td>
</tr>
<tr>
<td>------------------------------------------------------------------------------</td>
<td>------------------</td>
</tr>
<tr>
<td>Chemistry – General Chem I (5)</td>
<td>CHEM 110</td>
</tr>
<tr>
<td>Circuit Analysis (3)</td>
<td>ENGR 260</td>
</tr>
<tr>
<td>Circuit Analysis Lab (1)</td>
<td>ENGR 260L</td>
</tr>
<tr>
<td>Introduction to Programming Concepts and Methodologies for Engineers (4)</td>
<td>ENGR 120</td>
</tr>
</tbody>
</table>
### D. Computer, Software Track (14 units)

<table>
<thead>
<tr>
<th>Course Title</th>
<th>C-ID Designation</th>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Circuit Analysis (3)</td>
<td>ENGR 260</td>
<td></td>
</tr>
<tr>
<td>Circuit Analysis Lab (1)</td>
<td>ENGR 260L</td>
<td></td>
</tr>
<tr>
<td>Introduction to Programming Concepts and Methodologies for Engineers (4)</td>
<td>ENGR 120</td>
<td></td>
</tr>
<tr>
<td>Intermediate Programming and Data Structures (3)</td>
<td>COMP 132</td>
<td></td>
</tr>
<tr>
<td>Discrete Structures (3)</td>
<td>COMP 152</td>
<td></td>
</tr>
</tbody>
</table>

To attain 60 Chose required GE classes (calculation GE units = 60 - Fundamentals Core units - Required Engineering Courses units)

<table>
<thead>
<tr>
<th>GE requirements not specified by the Engineering MCs</th>
<th>GE units needed to attain 60 unit total</th>
<th>Suggested GE classes for all MC’s</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Mech., Aero, Manuf. Track (21-22 units)</td>
<td>A. 13 units</td>
<td>A1 Oral Communication (3)</td>
</tr>
<tr>
<td>B. Civil Track (21-22 units)</td>
<td>B. 13 units</td>
<td>A2 Written Communication (3)</td>
</tr>
<tr>
<td>C. Electrical Track (13 units)</td>
<td>C. 22 units</td>
<td></td>
</tr>
<tr>
<td>D. Computer, Software Track (14 units)</td>
<td>D. 21 units</td>
<td></td>
</tr>
<tr>
<td>Communication and critical Thinking (9)</td>
<td>See Catalog</td>
<td>Area A</td>
</tr>
<tr>
<td>Arts and Letter (9)</td>
<td>See Catalog</td>
<td>Area C</td>
</tr>
<tr>
<td>Course</td>
<td>Units</td>
<td>Area</td>
</tr>
<tr>
<td>------------------------------</td>
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<td>------------</td>
</tr>
<tr>
<td>Human Behavior (6)</td>
<td></td>
<td>Area D</td>
</tr>
<tr>
<td>Human Understanding &amp; Development</td>
<td>3</td>
<td>Area E</td>
</tr>
<tr>
<td>Life Sciences (3)</td>
<td></td>
<td>Area B2</td>
</tr>
</tbody>
</table>

Notes:

1. Each of the following floating topics must be covered in C-IDs PHYS 205 and/or PHYS 210, otherwise it is recommended that students take PHYS 205, 210, and 215 and that colleges adjust units so that total units for the Fundamentals Core still fit within unit parameter indicated above:

   1. Simple Harmonic Motion
   2. Mechanical Waves
   3. Properties of EM Waves
   4. Fluids
   5. Laws of Thermodynamics
      a. Heat Engines
      b. Kinetic Theory
      c. Entropy

2. C-ID PHYS 215 is recommended for students planning on transferring into majors that require coverage of Optics or Modern Physics.
3 - The Dynamics and Strength of Materials courses are recommended if a.) available, and b.) required by the transfer university.

4 - These Engineering Model Curricula are based on the assumption of completion of CSU GE (32 minimum additional units) or IGETC (26 minimum additional units).

5 - Four-year programs accepting an AS-T into a corresponding baccalaureate degree program may require coursework of up to the total units of that baccalaureate degree less 60 units.

Document Authors: May 6, 2013 Engineering FDRG

Revised Sept. 3, 2013 (K. Disney)

Revised Sept. 30, 2014 (K. Disney)

Revised Sept 1, 2015 to include ENGR 140 + ENGR 140L options

Implantation of this resolution will reward all the those faculty from the CCC and the CSU that collaborated create these four engineering model curriculum and the students that complete them.
The following are ASCSU resolutions passed with regards to SB1440/440 and engineering:

1. [https://www2.calstate.edu/csu-system/faculty-staff/academic-senate/resolutions/2009-2010/2952.pdf](https://www2.calstate.edu/csu-system/faculty-staff/academic-senate/resolutions/2009-2010/2952.pdf)
3. [https://www2.calstate.edu/csu-system/faculty-staff/academic-senate/resolutions/2010-2011/2972.pdf](https://www2.calstate.edu/csu-system/faculty-staff/academic-senate/resolutions/2010-2011/2972.pdf)
4. [https://www2.calstate.edu/csu-system/faculty-staff/academic-senate/resolutions/2010-2011/2998.pdf](https://www2.calstate.edu/csu-system/faculty-staff/academic-senate/resolutions/2010-2011/2998.pdf)
5. [https://www2.calstate.edu/csu-system/faculty-staff/academic-senate/resolutions/2010-2011/2999.pdf](https://www2.calstate.edu/csu-system/faculty-staff/academic-senate/resolutions/2010-2011/2999.pdf)
7. [https://www2.calstate.edu/csu-system/faculty-staff/academic-senate/resolutions/2012-2013/3130.pdf](https://www2.calstate.edu/csu-system/faculty-staff/academic-senate/resolutions/2012-2013/3130.pdf)
8. [https://www2.calstate.edu/csu-system/faculty-staff/academic-senate/resolutions/2013-2014/3166.pdf](https://www2.calstate.edu/csu-system/faculty-staff/academic-senate/resolutions/2013-2014/3166.pdf)
THE IMPACT OF ARTIFICIAL INTELLIGENCE (AI)
on Higher Education

1. RESOLVED: That the Academic Senate of the California State University (ASCSU) endorse the white paper on “Artificial Intelligence: And Its Impact on Career Preparation, Reorientation and Lifelong Learning” which draws attention to the transformation that AI will likely bring about in the employment landscape and the consequences for the structure and the nature of higher education with important impact on student and alumni success through career preparation and lifelong learning; and be it further

2. RESOLVED: That the ASCSU request the Chancellor’s Office (CO) establish a working group that includes CO staff, CSU faculty, students and staff, subject matter experts, and other relevant stakeholders to further elaborate and develop the implications of the themes identified in the white paper and propose possible actionable recommendations that might be needed to address these challenges; and be it further

3. RESOLVED: That the ASCSU distribute this resolution and the associated white paper to:

- CSU Board of Trustees,
- CSU Chancellor,
- CSU campus Presidents,
CSU campus Senate Chairs,

CSU Provosts/Vice Presidents of Academic Affairs,

CSU Career Advisory Centers,

California State Student Association (CSSA),

CSU Alumni Association, and

Emeritus and Retired Faculty and Staff Association (ERFSA)

RATIONALE: Artificial intelligence (AI) may transform the employment landscape dramatically. According to a 2015 study by McKinsey, a management consultant, 60% of jobs have 30% of their activities that could be replaced by AI technology already then in existence. Because AI particularly facilitates the automation of cognitive tasks, rather than manual tasks that prior waves of innovation have automated, the jobs most affected will be knowledge related, arguably precisely those in the kinds of careers towards which we have been guiding people for the last 30 years.

A university education is not simply about the acquisition and application of knowledge; an emphasis on developing learning as a capability in and of itself is, in part, what distinguishes universities from trade schools. This aspect of a university education is only going to become more important as the half-life of job-related knowledge shortens.

If AI transforms or even eliminates many of the ‘knowledge economy’ jobs for which we are preparing our students, the role of institutions of higher education will need to adapt. Some programs may need to make adjustments to adapt to the new employment landscape; but that is a curricular matter for the faculty and not the central subject of the white paper. It focuses more on the complementary activities the CSU provides to its students, namely career services, counseling and the cultivation of a strong alumni network.

The aim of the white paper is not to propose solutions but rather to encourage discussion and engagement with the potential challenges (educational, social and economic) that such a transformation would present. While the paper offers some tentative suggestions, these should be seen only as suggestive of the possible ways the CSU might choose to respond to these challenges.
Artificial Intelligence:

And its impact on Career Preparation, Reorientation and Lifelong Learning

March 2019

White paper sub-committee

Nola Butler-Byrd, San Diego State University
Simon Rodan, San Jose State University (lead author)
Susan Schlievert, CSU Fresno
Darlene Yee-Melichar, San Francisco State University

Academic Affairs Committee

Darlene Yee-Melichar, Chair, San Francisco State University
Susan Schlievert, Vice Chair, CSU Fresno
Nola Butler-Byrd, San Diego State University
Mary Ann Creadon, Humboldt State University
James G. LoCascio, Cal Poly San Luis Obispo
Janet Millar, CSU Bakersfield
Jeffrey Reeder, Sonoma State University
Simon Rodan, San José State University
Cynthia S. Trevisan, Cal Maritime
Gwen Urey, Cal Poly Pomona

The authors want to thank the a number of people who helped in the development of this white paper: Harlan Findley, Director People Operations, Google, CSU Trustee Peter Taylor, Gary Radine, CEO Delta Dental (retired), Michael Berman, CTO, CSU Office of the Chancellor, and members of the ASCSU.
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<td>Some AI-related quotes</td>
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Prologue

“Last year, I began getting fundraising cold calls. The caller would always start the conversation ‘I’m so glad I reached you. You know, you’re harder to get hold of than my gran-kids’. The spiel continued in this somewhat folksy fashion. After three or four calls, when it was clear that the script and the voice were exactly the same each time, I began to wonder whether I was actually talking to a person. It seemed unlikely that a) the fund-raising organization had only one person making calls, or b) that all the people making calls sounded exactly alike or c) that by chance I was contacted by exactly the same person four times in a row over the course of six months. That started me wondering if in fact I was actually interacting with a computer program, an AI application with speech recognition capability and a limited ability to comprehend meaning that was guiding its responses and questions. I put that possibility to someone in Google’s middle management, and although he didn’t know, he seemed completely unsurprised by the idea.

Alan Turing suggested that the test of machine intelligence\(^\text{1}\) is when a human could no longer tell that she was interacting with a machine. If indeed I was talking to an artificial intelligence application on those calls, it seems to have passed Turing’s test.”

\(^\text{1}\) https://en.wikipedia.org/wiki/Turing_test
People Operations, Harlan Findley, believes it quite possible that self-driving trucks will replace all manually-operated long-haul trucks within two to three years. The revenues per employee of “digital” firms like Google, Amazon, Facebook is three times that of firms operating principally in the physical domain. In part, this is a function of the non-rival nature of software and computer algorithms. Only a few people are needed to write a program that The World Economic Forum’s “The Future of Jobs Report” presents a variety of indicators showing how the world of work is likely to change for in the next five years. It notes that “no less than 54% of all employees will require significant re- and up-skilling” by 2022, suggesting a rapid rate of change in the workplace.

Implications for Higher Education
Higher education is likely to be impacted by the loss of jobs the in the knowledge economy in three ways. First, some programs may need to alter what they teach to continue to properly equip graduates for the job market as the nature of work changes. Second, new technologies may change the way education itself is delivered and the balance between the public and private sectors. And third, as work evolves ever more rapidly, the need for people to go back to further their education will occur at more frequent intervals over the course of their careers.

Career Preparation
Likewise, jobs may comprise activities that are differently vulnerable to replacement by AI, not all programs will be equally affected. While some aspects of medicine may soon be transformed by AI, other programs, such as a BA or MA in Art History and Visual Culture or a minor in Ancient and Medieval History, may be less affected. For those degree programs that may be most impacted faculty need to begin to consider how their programs may need to change and adapt once they understand which activities they are training students in are most susceptible to AI replacement. Departments may need to eliminate some parts of what they currently teach, and adapt others to incorporate AI into their programs. Indeed, some of the jobs in which their graduates find work may disappear completely. It is, therefore, important that program planning processes be forward-looking rather than simply an extrapolation of past trends.

AI in Educational Delivery
Enthusiasm for technology-based alternatives to the traditional model of faculty and students interacting in relatively small groups continues unabated. Amid calls for cost savings and greater efficiency, the allure new technology seems to appear irresistible to many outside the profession. Online solutions per se don’t necessarily change the cost model, but when AI is harnessed to allow classes of hundreds or thousands of students, the educational landscape changes dramatically. While the Udacity experiment at San José State was widely regarded as

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13 https://www.weforum.org/reports/the-future-of-jobs-report-2018
unsuccessful\textsuperscript{14}, the promise of ‘something for next to nothing’, leveraging new technology to reduce the cost of delivering education by an order of magnitude, remains. Anticipate renewed calls for MOOC\textsuperscript{15}s, supported by AI tools to “assist” in tasks like grading large numbers of papers or blockchain-based micro-credentialing where elements of a few hours each are “assembled” by the student-consumer into self-directed tailor-made qualifications. There will be no shortage of for-profit entrepreneurial start-ups\textsuperscript{16} looking to bring new (untested and unregulated) educational offerings to venture capitalists for funding and to the market as an alternative to more institutionally established models.

Nevertheless, there are likely to be useful application of new AI-based technologies and tools. The challenge higher education faces is in the judicious adoption of novelty. We should consider the ways in which AI might augment and enhance teaching. The CSU faculty is best placed to investigate, develop and carefully experiment with the ways in which AI might help faculty members in their jobs and help students develop skills, gain knowledge, and become better critical thinkers.

\textbf{Beyond the Classroom - Career Reorientation and Lifelong Learning}

In addition to career preparation and educational delivery, a third implication of the changes AI relates to the accelerating pace of workplace change. In addition to reconfiguring or eliminating jobs, AI may not cause just one discrete discontinuity in the labor market, but become a permanent driver of continuous change. Jobs may no longer remain stable in terms of their activities over the span of a person’s working life; they may appear, change or disappear in a matter of years rather than decades. This increasing rate of change may affect the longevity, the “half-life”, of the knowledge and capabilities students acquire as they earn their degrees. Student success\textsuperscript{17} is about more than the proportion of incoming students who complete their degrees and how quickly and efficiently they graduate. Can the CSU as an institution play a more active, useful and ongoing role in students’ lives after they graduate from our bachelor’s and master’s programs? Can we be better partners in our students’ lifelong learning journeys?

One implication of the shorter half-life of certain sets of knowledge may be that higher education beyond a four year degree may need to be more granular. Shorter knowledge half-life changes the cost-benefit calculation students make when considering a degree program. Prospective students may calculate that the likely time over which they can exploit the benefits of a four or even a two year program is too short to compensate for the cost. In cases where large ‘chunks’ of education (120 unit bachelor’s or 48 unit master’s programs) are no longer ideal, lifelong learning may involve many more frequent but much smaller dips into the well of knowledge. For


\textsuperscript{15} Massive Open On-line Course

\textsuperscript{16} e.g., https://odem.io/images/ODEM.IO-Technical-Whitepaper.pdf

\textsuperscript{17} http://www.calstate.edu/AcadSen/Records/Reports/documents/ASCSU_White_Paper_on_Student_Sucess.pdf
example, much shorter ‘micro-certificate’ programs may be more appropriate in such instances.\(^{18}\)

Whether career reorientation and re- and up-skilling are accomplished in many small bites at the apple or whether it is swallowed whole, the CSU might play an increasing role in student success and lifelong learning by providing our alumni not only with access to whatever new knowledge they need, post-graduation, but with counseling on what courses they might best choose and help with making the choice to come back for additional education. Where careers are disrupted by AI, requiring frequent pivots and substantial re- and up-skilling, lifelong learning will be an increasingly important part of our students’ working lives. Indeed a study published by MGI suggests that re- and up-skilling aren’t enough. “Instead, employers, employees, educational institutions, and public-sector leaders need to start talking about ‘lifelong employability’: helping people continually and successfully adapt as the economy evolves.”\(^{19}\) While we talk frequently about lifelong learning, often that means trying to provide students with the skills and mindset in their bachelor’s degrees needed for them to learn independently as they progress through their careers. But another way of thinking about lifelong learning is that we continue to engage with students in several ways after they graduate.

**Career Centers**

The CSU might provide lifelong career services. Currently students only have access to Career Center services for a year after graduation. This is not uncommon “One of the flaws of the American higher-education system is that once you cross the graduation stage, we largely sever the relationship with you—with the exception of viewing you as a donor.”\(^{20}\)

Moving forward, a Career Center’s role might be expanded in two ways. The easiest is that it continues to provide advice to students and connect them with potential job opportunities throughout their working lives rather than just as they leave the University. When students find themselves at a career discontinuities, Career Centers, in addition to helping them find another job, might also provide advice and guidance on re- or up-skilling. In conjunction with academic advising, Career Centers could help students better understand the evolving employment landscape, help them think through different alternatives, suggest suitable programs (masters, bachelors, certificates or micro-certificates), and help them evaluate the costs, benefits and risks associated with each.

More fundamentally, as a society we may need to change the way we think about who we are; currently we tend to ascribe identities, to ourselves and to others, based on a profession and often, by extension, our educational specialization (e.g. electrical engineer, computer scientist, accountant, and art historian). This makes moving from one domain to another seem more

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With thanks to Michael Berman, Chief Technology Innovation Officer, CSU Office of the Chancellor for this idea.

It might also require rethinking the way we pigeonhole and categorize ourselves as a society, though that is a much more daunting cultural challenge. Using a more granular task-oriented approach in career counseling (much as McKinsey did in their 2015 study) might increase the ease of transition between jobs and careers and help them achieve long term success.

The Alumni Association

At the risk of stating the obvious, the lifelong learners we often talk about are also our alumni. Many universities have developed vibrant alumni communities. While alumni associations are often seen important for fundraising, an engaged alumni network provides its members with communities of shared professional interest and a network of potential access to career opportunities. A lively alumni network would provide a channel through which the CSU could reach students to help them with career choices and the educational opportunities the CSU offers as their careers evolve. This, in conjunction with the expanded role of the Career Centers, would allow the CSU to continue to support student success over the course of their careers. The CSU might therefore consider investing additional resources in developing a more robust alumni network, perhaps with communities centered on campuses, colleges or programs and disciplines to create a sense of identity and deliver tangible value.

Rethinking education – from gorging to nibbling, from fire-hose to on-demand drip-feed

Currently, we generally deliver education in one almost continuous block from Kindergarten through graduation, either at the bachelor’s or master’s level. There are two drawbacks with this model. First, some of the knowledge acquired in that block will be out of date before it is needed. Second, some knowledge may not seem relevant at the time it is delivered and so will make less of an impression than were it acquired once its utility had become clearer. Being told how to deal with a problem I’ve not yet faced may be interesting; finding out how to solve a problem I’m struggling with is compelling. For example, teaching ideas about strategic management to 19-year olds may be premature given that they may not be in a position to worry about these kinds of issues for another twenty years or more. And, because they have never encountered these kinds of questions, these ideas may seem (and indeed may be) of little immediate practical value.

Could we then re-imagine education if we think of it as being a lifelong commitment both on the part of the students and the educational institution? If, once enrolled, the CSU committed to remain actively engaged with each of its students for life, the urgency of delivering everything all at once goes away. A learning plan could be developed for each student that matches the...
delivery of particular content to the evolution of their careers, a plan that evolves as they progress along their chosen career paths. Lifelong learning wouldn’t then, post-graduation, be left to the student to make good on; it becomes a shared endeavor, in which the University plays a role. The CSU in this model becomes, in part, a curator of a lifelong learning community, guiding students in their acquisition of knowledge and skills with relatively few geographic and disciplinary boundaries.

Conclusion
AI is set to transform the employment landscape. The ASCSU believes that at the program level, faculty should begin to consider the way AI may alter the set of skills students develop. At the campus level, the anticipated changes create an opportunity for the CSU to contribute to student success in a variety of ways: for example, by cultivating ongoing engagement between our students and alumni with the CSU, and by augmenting ancillary service such as career centers and academic advising so that these services might be offered in perpetuity to those who we help educate. And at the system level, there is an opportunity to gather and disseminate information and on new AI-based tools, to provide a locus for collective learning about their use and efficacy, and to use the System’s bargaining power to provide commercial tools to students and to the faculty at as low a cost as might be negotiated.
Appendix

Some AI-related quotes:

“If a computer can do one-third of your job, what happens next? Do you get trained to take on new tasks, or does your boss fire you, or some of your colleagues? What if you just get a pay cut instead? Do you have the money to retrain, or will you be forced to take the hit in living standards? It’s easy to see that finding answers to these questions is incredibly challenging.”

Technology writer James Vincent.

“Of the things that worry me about AI, job displacement is really high up. We need to make sure that wealth we create [through AI] is distributed in a fair and equitable way. Ethics to me isn’t about making sure your robot doesn’t turn evil. It’s about really thinking through, what is the society we’re building? And making sure that it’s a fair and transparent and equitable one.”

Andrew Ng, co-founder of Google Brain and former chief scientist of Baidu.

“If you can dramatically increase productivity and make more goodies to go around, that should be a good thing. Whether or not it turns out to be a good thing depends entirely on the social system, and doesn’t depend at all on the technology. People are looking at the technology as if the technological advances are a problem. The problem is in the social systems, and whether we’re going to have a social system that shares fairly, or one that focuses all the improvement on the 1% and treats the rest of the people like dirt. That’s nothing to do with technology. . . . I hope the rewards will outweigh the downsides, but I don’t know whether they will, and that’s an issue of social systems, not with the technology.”

Geoffrey Hinton, computer scientist and “Godfather of Deep Learning”.

“AI will increasingly replace repetitive jobs. Not just for blue-collar work but a lot of white-collar work. Basically chauffeurs, truck drivers anyone who does driving for a living their jobs will be disrupted more in the 15- to 20-year time frame and many jobs that seem a little bit complex, chef, waiter, a lot of things will become automated, we’ll have automated stores, automated restaurants, and all together in 15 years, that’s going to displace about 40 percent of the jobs in the world.”

Kai-Fu Lee, venture capitalist and an AI expert.

“I’m concerned about the concept of automation. Many jobs will be automated; a lot will be. This will have benefits for people but it also has a huge cost. I worry that ‘Made in America’ will become ‘Made by robots in America.’”

Brian Chesky, co-founder and CEO of Airbnb.

“With regard to health care and education, I think there’s a huge ethical question for society at large. We could build those systems to complement and work with physicians and teachers, or we could try to save money by having them replace people. It would be a terrible mistake to replace people.”

Barbara J. Grosz, the Higgins Professor of Natural Sciences at Harvard University and the first woman to serve as president of the Association for the Advancement of Artificial Intelligence.

https://www.cbinsights.com/research/ai-threatens-humanity-expert-quotes/
CFA Report to Academic Senate
April 24, 2019
Lewis Call
CFA SLO President

Permit-less parking: The University has confirmed that it would be a violation of California state law for Cal Poly to share parking data with Immigration and Customs Enforcement (ICE). The University intends to follow the relevant laws. AB 1460: CFA’s statewide legislative director has confirmed that it would be possible for courses other than Ethnic Studies courses to meet the requirement that the bill would establish. The bill directs the Academic Senate of the CSU and the CSU Council on Ethnic Studies to develop core competencies in ethnic studies. Courses that meet those core competencies would satisfy the proposed requirement.
The ASI Election results were announced on Thursday, April 25th at 11:10 AM in the University Union Plaza. The results are as follows:

**ASI President**
- Mark Borges

**College of Agriculture, Food and Environmental Sciences (4 Positions)**
- Armando Nevarez
- Chloe Fowler
- Genevieve Regli
- Matthew Borda and Julia Hizami tied for the fourth position. A special election will be hosted for this spot.

**College of Architecture and Environmental Design (3 Positions)**
- Zach Noyes
- Jack Wanner
- Chloe Wardrick

**Orfalea College of Business (4 Positions)**
- Mike Davis
- Max Feinswog
- Marissa Hiji
- Harjot Sohal

**College of Science and Math (4 Positions)**
- Connor O'Neil
- Sam Park
- Nicki Butler
- Warner Thom

**College of Engineering (5 Positions)**
- Alan Faz
- Paulina Nguyen
- Julia Kelley
- Joe Sandoval
- Tess Loarie

Please congratulate any student you may know on this list.

Best,

Mark Borges
Chair of the ASI Board of Directors
Adopted:

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

AS-___-19

RESOLUTION ON THE CAMPUS CHICK-FIL-A

WHEREAS, Chick-Fil-A and its Foundation have a history of donations to anti-LGBTQ organizations; and

WHEREAS, These donations represent direct evidence of a worldview highly inconsistent with our values of diversity and inclusivity at Cal Poly; and

WHEREAS, The presence of Chick-Fil-A on campus negatively impacts campus climate for many students, faculty, and staff; and therefore be it

RESOLVED: That the Academic Senate urges Cal Poly and Cal Poly Corporation to sever ties with Chick-Fil-A and terminate the contract with the on-campus franchise; and be it further

RESOLVED: Cal Poly and Cal Poly Corporation be mindful of the practices and donation patterns of its business partners and that said partners are held to the same high diversity and inclusion standards of as the rest of the campus community.

Proposed by: Thomas Gutierrez, Academic Senate Vice Chair
Date: April 23, 2019
4/22/19

To: Cal Poly Community
Re: Chick-fil-A Operations on Cal Poly Campus

As community partners, we recognize Cal Poly’s efforts to create a more diverse and inclusive campus. We acknowledge the effort of the Cross Cultural Centers to further LGBTQ+ initiatives at Cal Poly and the diverse speakers and consultants brought in to speak on topics of race and religion. GALA and other local non-profit organizations are members of the Coordinated Community Response Team (CCRT) working to prevent gender based violence, and we interact with students as interns in our programs, as they seek our services, and in other ways.

We believe Cal Poly needs to consider its vendors as part of the promise of inclusion. Chick-fil-A President Dan Cathy’s hostile view toward marriage equality is well known and the National LGBTQ+ task force is concerned about workplace protections for LGBTQ+ employees as they have heard firsthand about homophobia at Chick-fil-A locations.

Chick-fil-A has donated millions of dollars to anti-LGBTQ+ hate groups over the years, particularly in trying to prevent same sex marriage. While there was some talk of the company moving away from discriminatory stances, as recently as 2017 the Chick-fil-A Foundation donated more than $1.8 million to groups with a history of anti-LGBTQ+ discrimination including the Fellowship of Christian Athletes which requires its members to refrain from “homosexual acts” and the Paul Anderson Youth Home, which has characterized homosexuality as evil.

We believe continuing to contract with Chick-fil-A sends a contradictory message about where Cal Poly stands with regard to diversity and inclusion, and we urge President Armstrong to reconsider whether it is in the best interest of students and greater community.

We understand this may be framed as a free speech issue. Chick-fil-A’s President may have a right to homophobic speech, but that speech is contrary to the values Cal Poly espouses. The 1st Amendment does not require the patronage of Cal Poly faculty, students, and staff. We strongly urge you to reconsider allowing Chick-fil-A to continue operations on campus.

Sincerely

Gay and Lesbian Alliance of the Central Coast (GALA)
Tranz Central Coast (TCC)
The Queer Crowd, SLO Queerdos
Your True Gender, The Central Coast Coalition for Inclusive Schools
Diversity Coalition of San Luis Obispo County
5 Cities Hope
RESOLUTION ON UNIVERSITY FACULTY PERSONNEL POLICIES
CHAPTER 6: EVALUATION CYCLE PATTERNS

Impact on Existing Policy: This resolution establishes the statement of policy about faculty evaluation cycle patterns. Its impact on existing policy is described in the attached report. ¹

WHEREAS, The Academic Senate Faculty Affairs Committee is constructing a document entitled “University Faculty Personnel Policies” (UFPP) to house all university-level faculty personnel policies; and

WHEREAS, AS-859-18 resolved that “The Academic Senate Faculty Affairs Committee construct UFPP by proposing university-level faculty personnel policies to the Senate in the form of chapters or portions of chapters of UFPP according to the procedures approved in AS-829-17”; and

WHEREAS, AS-859-18 resolved that “By the end of Spring 2020 Colleges and other faculty units reorganize their faculty personnel policy documents to conform their documents to the chapter structure of UFPP”; therefore be it

RESOLVED: The policy document contained at the end of the attached report “Proposed Chapter of University Faculty Personnel Policies Document: CHAPTER 6: EVALUATION CYCLE PATTERNS” be established as Chapter 6: Evaluation Cycle Patterns of UFPP, and be it further

RESOLVED: Colleges and the Library revise their personnel policy documents by Spring 2020 to have chapter 6 of their documents cover evaluation processes as per chapter 6 of UFPP.

Proposed by: Academic Senate Faculty Affairs Committee
Date: February 26, 2019

¹ (1) Describe how this resolution impacts existing policy on educational matters that affect the faculty. Examples include curricula, academic personnel policies, and academic standards.
(2) Indicate if this resolution supersedes or rescinds current resolutions.
(3) If there is no impact on existing policy, please indicate NONE.
The Academic Senate Faculty Affairs Committee (FAC) is a standing Senate committee with representation from each college, the library and professional consultative services, Academic Affairs, and a student representative. FAC employs a streamlined process for Academic Senate approval of personnel policies. This process specifies the nature of consultation with faculty affected by proposed changes and provides a clear accounting of which policy documents have been superseded by the proposed change. It also allows the Senate Executive Committee to place non-controversial updates to personnel policies on the Senate consent agenda. Using the new process, FAC will replace the current University Faculty Personnel Actions (UFPA) document piece by piece to construct a new University Faculty Personnel Policies (UFPP) document. FAC may then employ the same process to update sections of the new UFPP on an as-needed basis.

The guiding principles in reforming the UFPA into the new UFPP are the following:

- **Clarify existing policies** that are common and already in place across the university.
- **Standardize procedures** for faculty evaluation at the university level.
- **Set baseline expectations and offer guiding principles** with directives to the colleges and departments to specify their criteria accordingly attuned to the disciplinary considerations specific to their programs.
- **Establish a common structure for all personnel policy documents across campus.**

The Senate has approved a resolution (AS-859-18) establishing the general structure of the UFPP in the form of its main chapter divisions, each containing thematically unified selections of policy:

1. Preface
2. Faculty Appointments
3. Personnel Files
4. Responsibilities in Faculty Evaluation Processes
5. Evaluation Processes
6. Evaluation Cycle Patterns
7. Personnel Action Eligibility and Criteria
8. Evaluation of Teaching and Professional Services
9. Evaluation of Professional Development
10. Evaluation of Service
11. Governance
12. Workload
13. Appendices

FAC is proposing to the Senate individual chapters of UFPP, each covered by its own Senate resolution. A draft of one of these chapters follows in this document, preceded by a summary of its content, impact, and implementation, and a description of feedback received on this proposed chapter.

### Summary of Chapter 6: Evaluation Cycle Patterns

Evaluation cycle patterns are multi-year sequences of annual evaluation processes leading to personnel actions. For instance, the sequence of annual evaluations that lead to retention, promotion,
Impact on Existing Policy

This chapter describes evaluation cycle patterns that are currently in use in colleges and other faculty units, in conformity with the University Faculty Personnel Actions document. These patterns conform with the Collective Bargaining Agreement (CBA), and in the case of lecturer evaluations especially, are largely driven by the CBA. Another evaluation cycle pattern not currently used at Cal Poly, but allowable by the CBA is offered as a default pattern.

This chapter therefore imposes no policy changes on the colleges since the colleges already have established for themselves their own evaluation cycle patterns and would have to change their own policies to revert to the proposed default or choose an alternative evaluation pattern.

Implementation

The establishment of UFPP by the Academic Senate would oblige the Colleges and Library to restructure their faculty personnel policy documents into the same chapter division as UFPP. When a chapter of UFPP is approved by the Academic Senate and ratified by the President, the Colleges and the Library will now have a focused area of new or revised policy that they must consult and, if necessary, use to revise their documents accordingly.

This chapter defines existing evaluation cycle patterns and allows the Colleges and Library to choose between options. It provides options to the Colleges and Library that might not have been apparent to them, and so this chapter would allow them to revisit their past practices and decide whether to continue with them or to change.

For those compliant with university policy, implementation would be exceedingly minimal. For those who are non-compliant this chapter provides the occasion for them to update the policies specific to this chapter and thereby come into compliance with the policies that have long been in place at Cal Poly.

Colleges and the Library may include in this chapter their choice of evaluation cycle patterns, and any necessary alternatives (e.g. for faculty hired with credit towards tenure). Material in this chapter may form the basis for process guides the Colleges and the Library can draft and include in the appendices of their personnel policy documents.

What follows is the proposed text of the chapter...
6. Evaluation Cycle Patterns

6.1. Summary

6.1.1. Evaluation cycle patterns are multi-year sequences of annual evaluation processes leading to personnel actions. For instance, the sequence of annual evaluations that lead to retention, promotion, and tenure for tenure-line faculty comprise an evaluation cycle pattern, as does the sequence of lecturer evaluations that lead towards a three-year contract or range elevation. This chapter defines all evaluation cycle patterns and allows the Colleges and the Library to choose the patterns that best serve their needs and expectations.

6.1.2. [CITATION OF FOUNDATIONAL SENATE ACTION].

6.2. Probationary Faculty Evaluation Patterns

6.2.1. Evaluation patterns for probationary faculty consist of a sequence of periodic and performance evaluations. The periodic evaluations must consist of Three-Stage Periodic Evaluations. The retention evaluations must be either Four-Stage or Five-Stage Performance Evaluations. Colleges and the Library must specify in their personnel policies whether Four-Stage or Five-Stage Performance Evaluations would be used for retention of probationary faculty. In the descriptions of evaluation patterns that follow, “Performance Evaluation” could be either Four-Stage or Five-Stage Performance Evaluation. Tenure and Promotion occurring together in one evaluation requires a Five-Stage Performance Evaluation. “Periodic Evaluation” for probationary faculty is always a Three-Stage Periodic Evaluation.

6.2.2. A Three-Year Retention Pattern starts with Periodic Evaluations in the first two years of appointment. In the third year of appointment a Performance Evaluation results in a decision of whether to retain the candidate for another three years or to another one year. Candidates retained for three years undergo a Periodic Evaluation in the fourth and fifth years followed by a Promotion and Tenure evaluation in their sixth year. Candidates retained for one year undergo annual Performance Reviews in their fourth and fifth years followed by a Promotion and Tenure evaluation in their sixth year.

6.2.3. The Three-Year Retention Pattern proceeds as follows for each year of appointment for faculty retained for three years:

- Year 1: Periodic Evaluation
- Year 2: Periodic Evaluation
- Year 3: Retention to fourth, fifth and sixth year
- Year 4: Periodic Evaluation
- Year 5: Periodic Evaluation
- Year 6: Tenure/Promotion

6.2.4. The Three-Year Retention Pattern proceeds as follows for each year of appointment for faculty retained for one year:

- Year 1: Periodic Evaluation
- Year 2: Periodic Evaluation
- Year 3: Retention to fourth year
- Year 4: Retention to fifth year
- Year 5: Retention to sixth year
- Year 6: Tenure/Promotion

6.2.5. A Two-Year Retention Pattern starts with a Periodic Evaluation in the first year of appointment. In the second year of appointment a Performance Evaluation results in a
decision of whether to retain the candidate for a third and fourth year of appointment. Candidates retained to a third and fourth year undergo a Periodic Evaluation in the third year followed in the fourth year by another Performance Evaluation for retention to a fifth and sixth year of appointment. Candidates retained to a fifth and sixth year undergo Periodic Review in the fifth year, followed by a Promotion and Tenure review in their sixth year.

6.2.6. The Two-Year Retention Pattern proceeds as follows for each year of appointment:
- Year 1: Periodic Evaluation
- Year 2: Retention to third and fourth year
- Year 3: Periodic Evaluation
- Year 4: Retention to fifth and sixth year
- Year 5: Periodic Evaluation
- Year 6: Tenure/Promotion

6.2.7. An Annual Retention Pattern starts with a Periodic Evaluation in the first year of appointment. From the second through the fifth year of appointment candidates undergo Performance Evaluation for retention to the next year. In the sixth year of appointment the candidate undergoes Promotion and Tenure evaluation.

6.2.8. The Annual Retention Pattern proceeds as follows for each year of appointment:
- Year 1: Periodic Evaluation
- Year 2: Retention to third year
- Year 3: Retention to fourth year
- Year 4: Retention to fifth year
- Year 5: Retention to sixth year
- Year 6: Promotion and Tenure

6.2.9. The Three-Year Retention Pattern shall be the default evaluation cycle pattern for tenure-track professors. Colleges and the Library may choose the Two-Year or the Annual Retention Patterns at their discretion, and must state that choice in their personnel policies document.

6.2.10. Choosing the Two-Year Retention Pattern requires establishing comparable patterns for faculty hired with credit towards tenure.

6.3. Post-Tenure Faculty Evaluation Pattern

6.3.1. A Three-Stage Periodic Evaluation shall be conducted during the third year in which a tenured faculty employee has served in the academic rank of Associate Professor or Associate Librarian. The purpose of the evaluation is formative and intended to assist and guide the Associate Professor or Associate Librarian in their preparation for subsequent promotion review. Associate Professors in their third year after tenure undergo a Three-Stage Periodic Evaluation.

6.3.2. A Three-Stage Periodic Evaluation of tenured faculty employees at any rank shall be conducted at least once every five years after promotion or appointment to their respective academic rank. Performance reviews for promotion can serve in lieu of periodic reviews.

6.3.3. More frequent periodic evaluation of a tenured faculty employee may be conducted by request of the faculty member, the department chair/head, or dean. After such a request, the periodic evaluation shall be conducted as soon as possible. Every fifth year after tenure every tenured faculty member undergoes a Three-Stage Periodic Evaluation.
6.3.2. Participants in the Faculty Early Retirement Program (FERP) shall not be required to undergo a periodic evaluation unless an evaluation is requested by either the FERP participant or the appropriate administrator (CBA 15.35).

6.3.3. Promotion from Associate Professor to Professor requires a Five-Stage Performance Evaluation.

6.4. Instructional Lecturer and Temporary Librarian Evaluation Patterns

6.4.1. Full-time instructional lecturers and temporary librarians appointed for the entire academic year that do not hold a three-year appointment with a 12.12 or 12.13 entitlement must be evaluated each year by a department PRC, the department chair, and dean.

- Years 1–5: Three-Stage Periodic Evaluation (Annual)
- Year 6: Three-Stage Periodic Evaluation (6 year cumulative)

6.4.2. Part-time instructional lecturers and temporary librarians appointed for the entire academic year that do not hold a three-year appointment with a 12.12 or 12.13 entitlement must be evaluated each year by the department chair, and dean. Tenured faculty members should be given the opportunity to provide evaluative statements and such statements shall be written and signed (CBA 15.24). Department and college personnel policies may require evaluation by a DPRC in addition to the department chair/head and dean levels of review.

- Years 1–5: Two or Three-Stage Periodic Evaluation (Annual)
- Year 6: Three-Stage Periodic Evaluation (6 year cumulative)

6.4.3. Full-time or part-time instructional lecturers and temporary librarians appointed for one or two academic quarters or a partial year for 12-month temporary faculty employees that do not hold a three-year appointment with a 12.12 or 12.13 entitlement may be evaluated at the discretion of the temporary faculty member, department chair/head or dean (CBA 15.25). These evaluations must include the department chair/head and dean levels of review and may include a department PRC. Tenured faculty members not participating on the PRC should be given the opportunity to provide evaluative statements and such statements shall be written and signed (CBA 15.24).

6.4.4. Full-time and part-time instructional lecturers and temporary librarians that hold a three-year appointment with a 12.12 or 12.13 entitlement must be evaluated at minimum in the third year of their three-year appointment. The temporary faculty member may be evaluated more frequently at the request of the temporary faculty member or dean (CBA 15.26).

- Year 3: Three-Stage Periodic Evaluation (Cumulative)

6.4.5. Part-time instructional lecturers and temporary librarians faculty members must be evaluated at least by the department chair, and dean. Tenured faculty members should be given the opportunity to provide evaluative statements and such statements shall be written and signed (CBA 15.24). Department and college personnel policies may require evaluation by a department PRC in addition to the department chair/head and dean levels of review.

- Year 3: Three-Stage Periodic Evaluation (Cumulative)

6.4.6. Lecturers eligible for range elevation must undergo at least a Three-Stage Periodic Evaluation. A Four-Stage Lecturer Range Elevation is permissible. Colleges must specify in their personnel policy documents which evaluation process they use for lecturer range elevation.
RESOLUTION ON
GRADUATE BLENDED PROGRAM POLICIES

1 WHEREAS, Coded memorandum AA-2012-01 establishes policies pertaining to CSU graduate
degree programs offering simultaneous matriculation of Blended Bachelor's and
Master's degree programs; and

2 WHEREAS, AA-2012-01 provides that issues not addressed in the memorandum shall be
determined at the campus level; and

3 WHEREAS, The purpose of the blended program (AA-2012-01) is to provide an accelerated
pathway from a bachelor's to a master's degree and to enhance the undergraduate
learning experience; and

4 WHEREAS, AS-860-19 states that "All Cal Poly undergraduate students shall complete a senior
project as part of their baccalaureate degree program requirements", and that "As a
bridge from college to career/postgraduate success, the senior project at Cal Poly is a
capstone experience with achievable outcomes that culminates in a self-directed final
production or product carried out under faculty direction"; and

5 WHEREAS, Under Title V, a minimum of 225 total units are required (Bachelor’s 180 + Master’s 45)
for receiving a combined (blended) degree; therefore be it

6 RESOLVED, That the Academic Senate approve the attached Policy on Blended Programs

Proposed by: Academic Senate Curriculum Committee
Date: April 23, 2019
POLICY ON BLENDED PROGRAMS

ADMISSION to BLENDED PROGRAM

Students may be admitted to a blended program in their third or fourth year of undergraduate study. Admission recommendation is determined at the program level with final approval from the Dean of Graduate Education. The student must submit an Admission to Blended Program Approval form. The specific requirements for admission are set by the program with approval by the Graduate Education Office and Office of the Registrar. Once accepted, students may take graduate-level courses towards master's degree requirements, as their schedules permit, provided they have met the course prerequisites.

TRANSITION to GRADUATE STANDING

Students admitted to the blended program will maintain their undergraduate status until they have reached a minimum of 180 degree applicable units. By the end of the first academic term in which the student has earned the number of units required for their bachelor's degree, the student must file a post-baccalaureate change of degree objective (PBCO) form. Once the form is processed, the student will transition to graduate status and incur the appropriate increase in tuition fees.

Students must have graduate standing for a minimum of two quarters before degree completion.

DOUBLE COUNTING UNITS

A student may apply any units that are in excess of the 180 undergraduate degree minimum requirements towards both their undergraduate and graduate degree requirements, up to a maximum of 9 units (double counted units).

SENIOR PROJECT REQUIREMENTS

Students in a blended program must complete all undergraduate requirements, including senior project requirements as detailed in the Cal Poly Catalog, along with the culminating experience required by the individual graduate program. In cases where the graduate culminating experience is a thesis or project, a student can align the objectives for this culminating experience with those of their senior project. The graduate thesis or project and the senior project must have separate course numbers, each with their own learning objectives and final deliverables.
January 9, 2012

MEMORANDUM

TO: Provosts/Vice Presidents, Academic Affairs

FROM: Ephraim P. Smith
Executive Vice Chancellor and Chief Academic Officer

SUBJECT: “Blended” or “4 + 1” Bachelor’s and Master’s Degree Programs

This coded memorandum establishes systemwide minimum processes and policies pertaining to CSU undergraduate and graduate degree programs offered to students through simultaneous matriculation. Combinations that blend degree and credential programs are excluded, and issues not addressed in this memorandum shall be determined at the campus level.

Campuses are not required to offer blended programs, and the standards included herein are minimum requirements. Campuses wishing to offer blended bachelor’s and master’s programs will need to be aware that timely coordination is required between the academic department and the campus registrar’s office to ensure accurate recording of the student’s transition from undergraduate to graduate status. This will have direct consequences for student fee assessment and financial aid eligibility, as types of aid and award amounts may vary according to the student’s official academic objective. Appropriate state funding to the campus will also depend on accurate recording of student transition in blended programs.

1. Authorization to Implement Blended Programs
The president or designee is authorized to implement programs blending existing baccalaureate and master’s degree programs in the same support mode and for the purposes of providing an accelerated pathway to a master’s degree, and to enhance the undergraduate learning experience. Campuses shall establish, monitor, and maintain appropriate academic rigor and quality.
1.1 Authority to grant postbaccalaureate and graduate special-action admission is provided under Title 5 section 41001:

An applicant who does not qualify for admission under the provisions of subdivisions (a) or (b), or both such subdivisions, of Section 41000, may be admitted by special action if on the basis of acceptable evidence the applicant is judged by appropriate campus authority to possess sufficient academic, professional and other potential pertinent to the applicant's educational objectives to merit such action.

1.2 Blended programs must meet all applicable CSU policies and state and federal laws.

2. Reporting

2.1 Blended bachelor’s and master’s degree programs will continue to use the existing CSU degree program codes (formerly “HEGIS”) and Classification of Instructional Programs (CIP) codes for their component undergraduate and graduate degree programs. Unlike concurrent degree programs, new CSU degree codes will not be assigned for the blended bachelor's and master’s programs.

2.2 To ensure that enrollments are reported accurately, the campus is required to notify Academic Programs and Policy in the Chancellor’s Office, signaling an intention to implement the planned blended program. The resultant Chancellor’s Office software edits will allow accurate reporting in the CSU Enrollment Reporting System (ERS), without receiving an “error” message.

2.3 While students in regular, non-blended, baccalaureate and graduate programs have a degree objective code that ranges from digits “2” to “7,” students in blended programs have only the digit “9” as their degree objective code.

2.4 When a blended-program student has earned at least 120 semester/180 quarter units toward program completion, the campus will change the student level code to “5,” signifying graduate standing. As these students have yet to attain either a baccalaureate or master’s degree, their degree held code will remain as either “0” or “1.” The term FTE calculation for these students will be: 12 units equals one FTES.

3. Application to Blended Programs

3.1 A student must apply to the blended program while in undergraduate status and will be admitted as an undergraduate to the bachelor’s component of the blended program.

3.2 Students shall not be required to apply formally for graduate admission.
4. Enrollment and Enrollment Status

4.1 While in undergraduate status, a student in a blended program will take graduate-level courses required for the master’s degree.

4.2 At the end of the first academic term in which blended-program students have earned at least 120 semester/180 quarter units (the minimum required for the regular baccalaureate major degree program), the campus will change the student-level codes to “5,” signifying graduate degree objective status.

4.3 Units considered toward meeting this degree-objective status threshold may include either undergraduate or graduate, and shall include only those units that count toward satisfying either the bachelor’s or master’s requirements in the blended program.

4.4 To ensure proper awarding of degree credit, all lower-division work (including lower-division general education courses and American Institutions courses) shall be completed prior to changing to graduate degree objective status.

5. International (F-1 Visa Holder) Students

A letter must be submitted to the appropriate office on campus to indicate the change of degree status for international students. This requirement is related to the students’ need to maintain full-time status, as the number of units required for full-time status is different at the undergraduate level and graduate level.

6. Tuition Fees

6.1 A student will be assessed the undergraduate State University Tuition Fee only during the time in which the blended-program student has earned fewer than 120 semester/180 quarter units applicable to the blended bachelor’s and master’s degree programs.

6.2 When the degree-objective status is changed to “graduate,” the student will be assessed the graduate student fee, and may continue to take upper-division undergraduate courses.

6.3 Students in a master’s degree program that has been authorized to assess the higher graduate professional degree (“MBA Fee”) will only be charged that tuition fee for courses required to complete the fee-approved master’s degree program.

7. Minimum Requirements for Completion of Blended Programs

A minimum of 150 semester units (120 + 30) or 225 quarter units (BS 180 + MS 45) are required in blended programs.
8. Provision for Completing the Baccalaureate Portion Only
   If a student in a blended program opts not to complete the master’s program but does complete the undergraduate degree requirements, undergraduate matriculation shall be re-opened in order to grant the baccalaureate degree. There shall be no related cost to the student nor refund of previous graduate fees paid.

9. Awarding of Degrees
   Both degrees may be awarded during the same term and at a single graduation ceremony, as authorized by Executive Order 971 (http://www.calstate.edu/EO/EO-971.html). Students are evaluated for Latin honors based on the first 120 semester units or 180 quarter units (i.e. the time period of undergraduate degree objective), regardless of the number of graduate courses taken prior to the transition to graduate status.

For questions regarding Enrollment Reporting System coding, please contact Dr. Philip Garcia at (562) 951-4764 or pgarcia@calstate.edu. Admission questions and Common Management System issues may be directed to Mr. Eric Forbes at (562) 951-4744 or eforbes@calstate.edu. Financial aid questions should be addressed to Mr. Dean Kulju at (562) 951-4737 or dkulju@calstate.edu. Dr. Christine Mallon may be reached at (562) 951-4672 or cmallon@calstate.edu to answer questions related to curriculum.

ES/clm

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Deans, Graduate Studies
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