

Adopted: April 21, 2015

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

AS-792-15

**RESOLUTION ON APPROVING ASSESSMENT PROCESS FOR COURSES
MEETING SUSTAINABILITY LEARNING OBJECTIVES**

- 1 WHEREAS, Resolution AS-787-14 “Resolution on Sustainability”, directs the Academic Senate
2 Sustainability Committee to develop a list of classes based on a revised Senate accepted
3 assessment process that meet the Sustainability Learning Objectives; therefore be it
4
5 RESOLVED: That the Academic Senate approve the attached document “Draft Process to Vet
6 Sustainability Courses for SUSCAT” as a Senate accepted assessment process; and be it
7 further
8
9 RESOLVED: That all recommendations regarding which courses to list on SUSCAT be placed on the
10 Academic Senate’s consent agenda.

Proposed by: Sustainability Committee
Date: January 12, 2015
Revised: March 16, 2015
Revised: April 21, 2015

Draft Process to Vet Sustainability Courses for Suscat

AS-787-14 resolved “That the Academic Senate Sustainability Committee be directed to develop a list of classes based on a revised Senate accepted assessment process that meet the Sustainability Learning Objectives.” In responding to this resolution, the Academic Senate Sustainability Committee (ASSC) made progress during Fall quarter 2014 by following a simplified Engineering Design Process Flow. Stated in a somewhat simplified manner, the Engineering Design Process uses the following steps:

1. Identify the process stakeholders
2. Define the stakeholders' needs
3. Translate the stakeholders' needs into requirements and specifications
4. Design a process to meet the requirements and specifications
5. Implement and test the Policy.

Figure 1 shows the intended process development and application timeline.

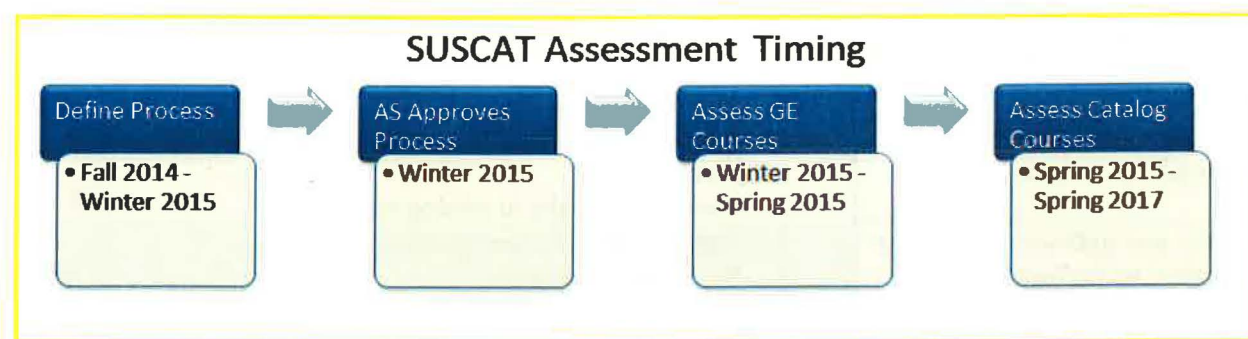


Figure 1 SUSCAT Assessment Timeline

During Fall quarter 2014 and January 2015, the process moved through steps 1, 2, 3, and 4, informed by feedback received from key stakeholders. This document contains the results of steps 1–4.

1. Identify the process stakeholders

The process should meet the needs of several stakeholders:

1. Faculty and department heads who teach sustainability courses and want them listed on SUSCAT
2. Students who want to take sustainability courses
3. Faculty and staff who implement the policy by performing the review
4. Faculty and staff who maintain SUSCAT
5. The Academic Senate, Academic Senate Curriculum Committee, and the GE Governance Board
6. Academic Advisors
7. CSU Administrators
8. Faculty and department heads who would like to teach sustainability but don't know how.

2. Define the stakeholders' needs

Table I identifies stakeholders associated with the assessment process and their needs. The third column indicates a check, if the currently defined process meets those stakeholder needs. The current process does meet almost all needs listed for the stakeholders. Because of strong objections expressed to flagging sustainability courses either in the catalog or on PASS, the currently defined process doesn't meet those needs. Rather, it describes how to identify courses to list on the SUSCAT website, suscat.calpoly.edu.

Table I Stakeholder Needs Assessment

Stakeholder	Needs	Met?
Faculty and department heads who teach sustainability courses and want them listed on SUSCAT	<ol style="list-style-type: none"> 1. Simple and convenient process. 2. Reproducible process 3. Can appeal decision. 	✓
Students who want to take sustainability courses	<ol style="list-style-type: none"> 1. Reproducible process. 2. Process should identify all relevant sustainability courses. 3. Should see results in catalog and PASS. 	✓ ✓ X
Faculty and staff who implement the policy by performing the review	<ol style="list-style-type: none"> 1. Simple and convenient process. 2. Reproducible process. 	✓
Faculty and staff who maintain SUSCAT	<ol style="list-style-type: none"> 1. Easy to update. 2. Automatically delist defunct courses. 3. Automatically become aware of new course. 	✓
The Academic Senate, Academic Senate Curriculum Committee, and the GE Governance Board	<ol style="list-style-type: none"> 1. Reproducible process. 2. Serves students and faculty. 3. Serves curricular needs. 4. Serves course and catalog administrative needs. 	✓
Academic Advisors	<ol style="list-style-type: none"> 1. Reproducible process. 2. Process should identify all relevant sustainability courses. 3. Should see results in catalog and PASS. 	✓ ✓ X
CSU Administrators	<ol style="list-style-type: none"> 1. Report data on percentage of classes & number of classes meeting each Sustainability Learning Objective [SLO] 	X
Faculty and department heads who would like to teach sustainability courses but don't know how.	<ol style="list-style-type: none"> 1. Clear Instructions 	✓

3. Translate the stakeholders' needs into requirements and specifications

In order to develop process requirements and specifications from the stakeholder needs, the ASSC relied heavily on lessons learned from its review of GE courses in 2012. For the 2012 review, the ASSC developed a rubric to use to evaluate whether courses achieve at least two of the Sustainability Learning Objectives [SLOs]. Each college representative to the ASSC applied the rubric to the GE courses from their college, obtaining input from the ASSC, as necessary. During the 2012 GE course pilot assessment, the ASSC learned the following lessons:

1. Based on the title and catalog description, many or most courses clearly DO NOT achieve at least two SLOs.
2. Based on the title, catalog description, and course proposal, some courses clearly DO achieve at least two SLOs.
3. Based on the title, catalog description, and course proposal, some courses MAY or MAY NOT achieve at least two SLOs. This is a small group.
4. A relatively small fraction of GE courses achieve at least two SLOs.
5. Only list courses in which students achieve at least two SLOs regardless of the instructor.
6. A two-part rubric covered the above cases. One part used title and catalog description only. The other part relied on a course proposal form, course modification form, ABET or other detailed Syllabus, and/or Expanded Course Outline.

After significant deliberations prior to the 2012 GE course pilot assessment, during a 2012 inter-rater norming exercise, after the 2012 course pilot assessment, during a Fall 2014 inter-rater norming exercise, and during its Fall 2014 and Winter 2015 meetings, the ASSC arrived at the SUSCAT Evaluation Rubric shown in Figure 2. It represents version 10, and it contains elements gleaned from multiple sources. Most notably, two sources informed the rubric creation and evolution:

1. The 2011 University Expository Writing Rubric,
Available: <http://ulo.calpoly.edu/content/writing-proficiency-assessment>, and
http://content-calpoly-edu.s3.amazonaws.com/ulo/1/documents/university_writing_rubric.pdf
2. Association of American Colleges & Universities, *VALUE (Valid Assessment of Learning in Undergraduate Education) Rubric Development Project*, 2007-2009,
Available: <http://www.aacu.org/value/rubrics>

During the 2012 GE course pilot assessment, the ASSC agreed that a course meeting two or more SLOs met the threshold for listing. Further deliberations during Fall 2014 reveal that the ASSC still agrees with this threshold, but with an important caveat. Just having students learn about two or more SLOs in a minimal fashion does not suffice. Meaningful sustainability learning should take place, and the revised rubric seeks to measure meaningful learning in two ways:

1. Students should achieve multiple SLOs during the course, and
2. Students achieve the SLOs during a meaningful fraction of the course.

Academic Senate Sustainability Committee SUSCAT Evaluation Rubric

Course Prefix & Number

Replace this cell with course Prefix & Number, e.g. GEOG 301

Course Title

Replace this cell with course Title, e.g. Geography of Resource Utilization

Course Description

Replace this cell with course catalog description, e.g. A multicultural, world view of the interconnections of the following resource systems: food, energy, water, and non-fuel minerals. A pervading theme is the sustainability of these systems. 4 lectures. Prerequisite: Completion of GE Areas A, D3. Recommended: Junior standing. Fulfills GE D5 except for Social Sciences majors.

GE Area, if any

Evaluator name:

Joe Blow

Evaluator User Name:

jblow@calpoly.edu

Initial Assessment Based on Course Title & Description		Points Possible	Points Actual		
Yes, the course very likely achieves at least two of the four SLOs.	2	Enter score 0-2 in cell F10			
Maybe, the course might achieve one or more SLOs.	1				
No, the course doesn't seem to address the SLOs.	0				
Cal Poly defines sustainability as <i>the ability of natural and social systems to survive and thrive together to meet current and future needs.</i>					
Assessment Based on Course Proposal or Syllabus	Minimal Evidence Score = 0	Threshold Evidence Score = 1	Strong Evidence Score = 2 *	Superior Evidence Score = 3 **	Score
SLO1: Students define and apply sustainability principles within their academic programs	Syllabus doesn't mention SLO	Syllabus mentions SLO	Syllabus shows SLO student outcomes	Syllabus has SLO as a major course focus	Enter score 0-3 in cell F17
SLO2: Students explain how natural, economic, and social systems interact to foster or prevent sustainability	Syllabus doesn't mention SLO	Syllabus mentions SLO	Syllabus shows SLO student outcomes	Syllabus has SLO as a major course focus	Enter score 0-3 in cell F18
SLO3: Students analyze and explain local, national, and global sustainability using a multidisciplinary approach	Syllabus doesn't mention SLO	Syllabus mentions SLO	Syllabus shows SLO student outcomes	Syllabus has SLO as a major course focus	Enter score 0-3 in cell F19
SLO4: Students consider sustainability principles while developing personal and professional values	Syllabus doesn't mention SLO	Syllabus mentions SLO	Syllabus shows SLO student outcomes	Syllabus has SLO as a major course focus	Enter score 0-3 in cell F20
Total Score (SLO1 - SLO4)					0
20% or more of the course covers the SLOs.				Yes/No	Enter yes or no in cell F24
Sustainability Course (Score >=6 AND 20% or more sustainability)					No
If course doesn't address the SLOs, could it?				Yes/No	
Suggestion(s) how course might address one or more of the SLOs:					
Other Comments:					

* A score of 2 requires the syllabus to show SLO student outcomes AND mention the SLO.

** A score of 3 requires the syllabus to have the SLO as a major course focus AND show the SLO student outcomes AND mention the SLO.

Figure 2 SUSCAT Evaluation Rubric

Since many courses only require reviewing the course title and catalog description, the rubric contains a section titled *Initial Assessment Based on Course Title & Description*. Since a small fraction of courses requires more detailed review, the rubric contains a section titled *Assessment Based on Course Proposal or Syllabus*. This section relies on review of at least a course proposal form, course modification form, ABET or other detailed Syllabus, and/or Expanded Course Outline. The SUSCAT Evaluation Rubric uses the term Syllabus generally to refer to the various course descriptions listed in the previous sentence. The rubric does not intend to rely on instructor specific documentation. A possibility exists that such information may prove less easy to access for some courses than for others, so the process leaves reviewers an option to request more information, if desired.

The detailed review examines to what extent the course addresses each SLO based primarily on the evidence provided from the course learning objectives. Figure 3 shows the SLO evaluation scale portion of the rubric. Based how the Syllabus mentions a SLO, shows student outcomes for a SLO, or has a SLO as a major course focus, the scale rates the evidence “Minimal,” “Threshold,” “Strong,” or “Superior” and assigns a corresponding score from 0 to 3 for each SLO. With four SLOs each rated from 0 to 3, the course would receive a score from 0 to 12. The ASSC feels that a total score of 6 represents the minimum score necessary to demonstrate a course achieves multiple SLOs. A course could reach a total score of 6 via several combinations of scores for individual SLOs. For example, two SLOs with superior evidence plus two SLOs showing minimal evidence would give a total score of $2*3 + 2*0 = 6$. Or, three SLOs with strong evidence plus one SLO showing minimal evidence would give a total score of $3*2 + 1*0 = 6$. Similarly, $3 + 2 + 1 + 0$ or $2 + 2 + 1 + 1$ reach the required score of 6.

Additionally, to measure whether SLOs reach a meaningful fraction of the course, the rubric asks whether at least 20% of the course covers the SLOs. The 20% threshold arose from multiple discussions at ASSC meetings before, during, and after the Fall 2014 inter-rater norming exercise. The ASSC reached a consensus that having at least two weeks of a course addressing the SLOs meets its threshold. Combining these goals of meeting multiple SLOs over at least two weeks in the course leads to the rubric’s threshold for listing a course on SUSCAT: The total score equals or exceeds 6, and at least 20% of the course covers the SLOs.

Minimal Evidence Score = 0	Threshold Evidence Score = 1	Strong Evidence Score = 2 *	Superior Evidence Score = 3 **
Syllabus doesn't mention SLO	Syllabus mentions SLO	Syllabus shows SLO student outcomes	Syllabus has SLO as a major course focus

Figure 3 SLO Evaluation Scale from SUSCAT Evaluation Rubric

Table II contains and justifies the process specifications as derived from the stakeholder needs and the marketing requirements. In summary, the process expects the ASSC to consider all courses in the catalog for listing on the SUSCAT website, starting with the GE courses and giving expedited reviews as requested for specific courses. The process relies on a variety of course documentation and iterative reviews as necessary to assure quality control and inter-rater reliability. The currently proposed process meets all but two of the marketing requirements.

TABLE II SUSCAT REVIEW POLICY REQUIREMENTS AND SPECIFICATIONS

Marketing Requirements	Specifications	Justification
2	SUSCAT contains any course achieving at least two SLOs (Rubric score ≥ 6 AND at least 20% of course covers SLOs).	Policy approved by ASSC in 2012 and revised in 2014.
1, 2, 4	The ASSC reviews all GE courses.	Per 2014-2015 ASSC charges.
2, 4, 8, 9, 10, 11	The ASSC must review additional courses.	Policy approved by ASSC in 2014.
1, 2, 3, 4, 6	Faculty may submit SUSCAT review requests for specific courses to the ASSC.	To prevent overlooking a course belonging in SUSCAT.
1, 2, 3, 4, 9	A process exists to handle faculty appeals of initial SUSCAT review decisions.	Provides checks and balances. Encourages inter-rater reliability.
1, 2, 3, 4, 9, 10	The review process may require additional information such as course proposal forms, course modification form, ABET or other detailed Syllabus, and/or Expanded Course Outline.	Title and course description alone may not suffice to identify whether a course meets any of the SLOs.
1, 2, 3, 4, 9, 10, 11	Applicants may justify how a course meets SUSCAT approval criteria.	In case course documentation supplied for SUSCAT review didn't suffice for an accurate review, applicants may submit additional documentation.
4, 8, 9, 10, 11	The ASSC reviews all new courses approved by the ASSC.	To maintain currency.
9, 10, 11	The SUSCAT list appears online.	To make list easily available to all stakeholders.
4, 9, 10	The ASSC communicates decisions to faculty and department heads.	Requested by several stakeholders.
Marketing Requirements <ol style="list-style-type: none"> Simple and convenient process. Reproducible process Can appeal decision. Process should identify all relevant sustainability courses. Should see results in catalog and PASS. Not specified yet. Easy to update. Automatically delist defunct courses. Automatically become aware of new course. Serves students and faculty. Serves curricular needs. Serves course and catalog administrative needs. Report data on percentage of classes & number of classes meeting each SLO Not specified yet. 		

4. Design a process to meet the requirements and specifications

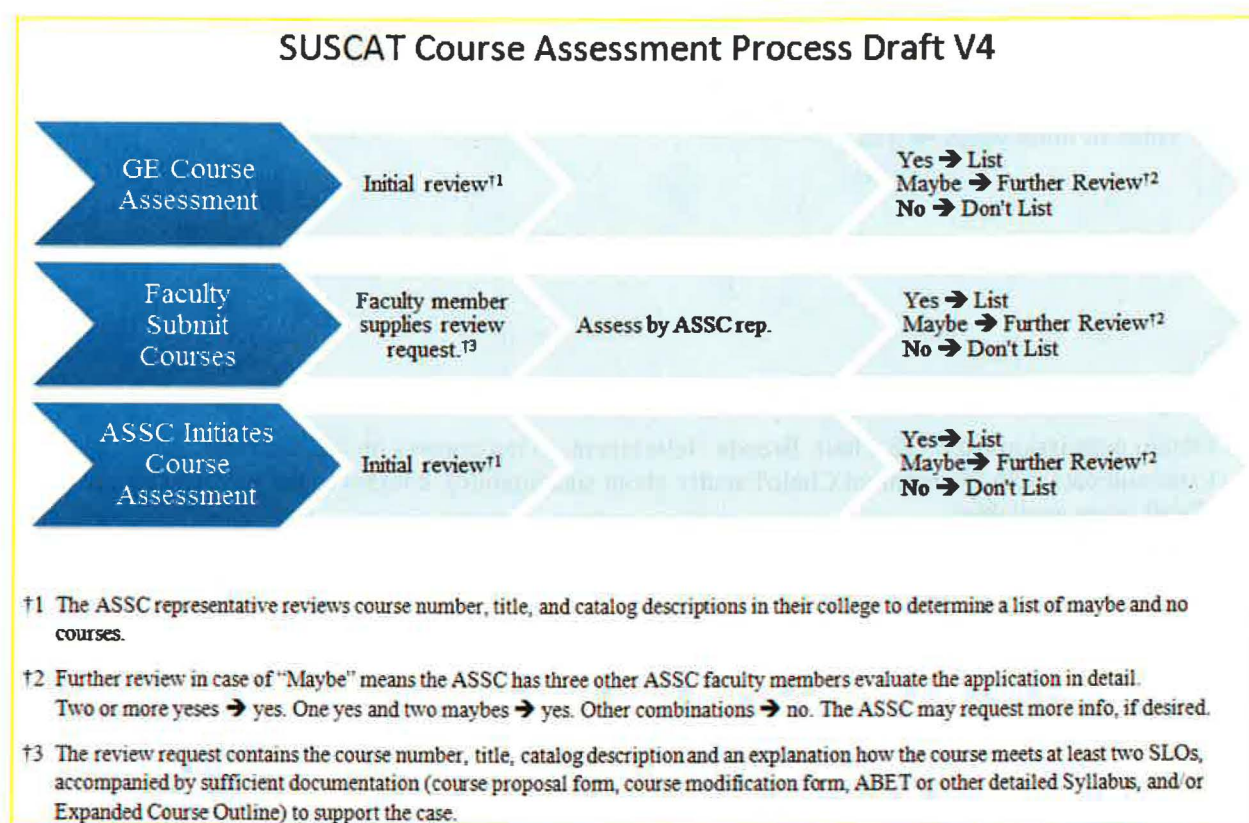


Figure 4 SUSCAT Course Assessment Process Draft V4

SUSCAT Course Appeals Process

A faculty member may appeal a yes or no assessment decision to the ASSC by sending an email with their reasoning to the ASSC Chair. The Chair assigns five ASSC faculty members to assess the course in detail. Three or more yeses → yes.

Figure 5 SUSCAT Course Appeals Process

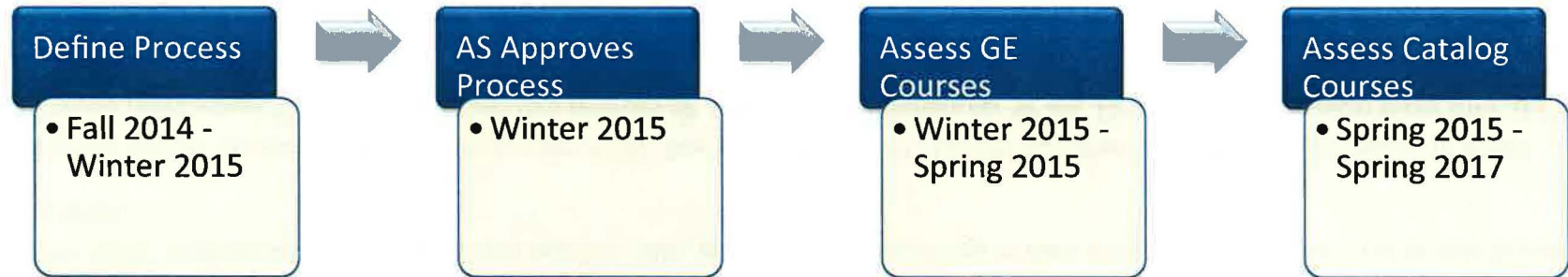
Listing SUSCAT GE Courses on GE Website – Details

1. Obtain permission from GE Chair, Brenda Helmbrecht, to tag courses on GE web site
2. Communicate with Department Chair/Faculty about sustainability courses to list on GE web site (Draft letter available)
3. Advise Curriculum Committee
4. Advise Academic Senate/Executive Committee
5. Communicate to campus/students

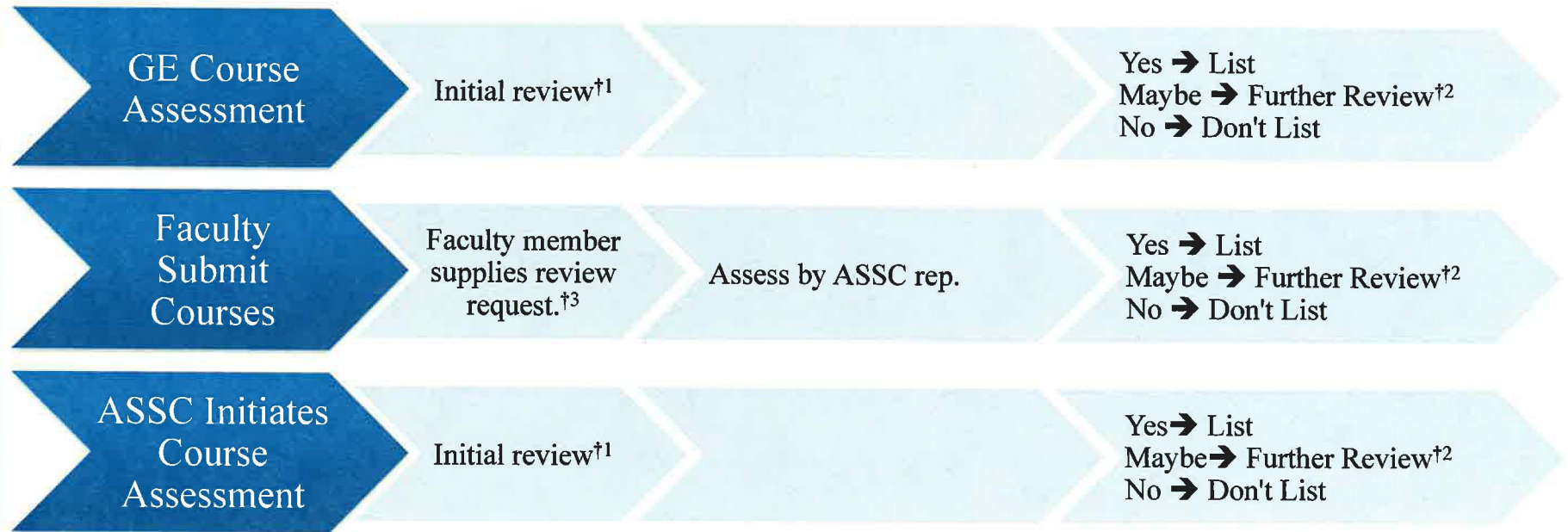
Listing SUSCAT Courses on SUSCAT – Details

1. ASSC updates the SUSCAT course list quarterly.
2. ASSC sends updated list to Miles Clark quarterly.
3. Miles Clark updates <http://suscat.calpoly.edu/>

SUSCAT Assessment Timing



SUSCAT Course Assessment Process Draft V4



†1 The ASSC representative reviews course number, title, and catalog descriptions in their college to determine a list of maybe and no courses.

†2 Further review in case of “Maybe” means the ASSC has three other ASSC faculty members evaluate the application in detail. Two or more yeses → yes. One yes and two maybes → yes. Other combinations → no. The ASSC may request more info, if desired.

†3 The review request contains the course number, title, catalog description and an explanation how the course meets at least two SLOs, accompanied by sufficient documentation (course proposal form, course modification form, ABET or other detailed Syllabus, and/or Expanded Course Outline) to support the case.

SUSCAT Course Appeals Process

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Listing SUSCAT GE Courses on GE Website – Details

1. Obtain permission from GE Chair, Brenda Helmbrecht, to tag courses on GE web site
2. Communicate with Department Chair/Faculty about sustainability courses to list on GE web site (Draft letter available)
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4. Advise Academic Senate/Executive Committee
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Listing SUSCAT Courses on SUSCAT – Details

1. ASSC updates the SUSCAT course list quarterly.
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3. Miles Clark updates <http://suscat.calpoly.edu/>

State of California
Memorandum

CAL POLY
SAN LUIS OBISPO

To: Gary Laver
Chair, Academic Senate

Date: May 21, 2015

From: Jeffrey D. Armstrong
President



Copies: K. Enz Finken
M. Pedersen

Subject: Response to Academic Senate Resolution AS-792-15
Resolution on Approving Assessment Process for Courses Meeting Sustainability Learning Objectives

This memo formally acknowledges receipt and approval of the above-entitled Academic Senate resolution.

Please express my appreciation to the members of the Sustainability Committee for their attention to this matter.