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## Instructional Program Review

Program Name: **Architecture**  
 Program Contact: **Demsetz, Laura**  
 Academic Year: **2013-2014**  
 Status: **Submitted**

### 1. Description of Program

Provide a brief description of the program and how it supports the college's [College Mission and Diversity Statements](#), [Institutional Priorities, 2008-2013](#), [5 in 5 College Strategies, Spring 2011](#), and other [Institutional Program Planning](#) as appropriate.

College of San Mateo's architecture program prepares students to transfer to B.A. and B.Arch programs and related environmental design majors through five major-specific courses. In addition, the program supports both architecture majors and the campus as a whole through ARCH 100, a general education course that satisfies CSU-GE Area C1 and IGETC Area 3A. Students can earn an A.S. degree in architecture, which may assist them in finding employment. However, the entry-level professional degree is the B.Arch (or for students earning a B.A. degree, the M.Arch). B.Arch programs at public universities in California are highly impacted at the freshman level, restricting access for students who cannot afford a private college education.

As the only architecture transfer program in the district, CSM's architecture program serves as a gateway to architecture and related professions and supports the college mission of providing educational opportunity to residents of San Mateo County and the Greater Bay Area. The program promotes student engagement (an objective under Institutional Priority 2: Promote Academic Excellence) by developing students' interest in art and design into professional skills/abilities that impact the community through the built environment. Students experience this impact through classroom and club projects that reach into the community, such as the Architecture Club's participation in the Design Village event at Cal Poly San Luis Obispo, for which student teams design, construct, and live in structures that meet specified constraints.

### 2. Student Learning and Program Data

#### A. Discuss Student Learning Outcomes Assessment

Reflect on recent SLO assessment results for courses and degrees and certificates offered by the program. Identify trends and discuss areas in need of improvement.

Only one section of each architecture course is offered each academic year. Currently, all SLOs are assessed with each offering of each course, with TracDat entry in June for the academic year. Results from 2012-2013 show that the 80% threshold for success is met in all courses for all SLOs; most students who successfully complete courses achieve an advanced (rather than rudimentary) level of proficiency. Two of the three students who completed degrees last year *strongly agree* that they meet each of the program SLOs; the third *agrees*.

#### B. Student Success Indicators

1. Review **Student Success and Core Program Indicators** and discuss any differences in student success indicators across demographic variables. Also refer to the **College Index** and other relevant sections of the **Educational Master Plan: Update, 2012**, e.g., Student Outcomes and Student Outcomes: Transfer. Basic Skills programs should also refer to **ARCC** data.

In 2012-13, success and retention of students in the architecture program (success: 71.3%; retention: 79.6%) dropped from 2011-12 highs (success: 81.5%; retention: 91%) to values close to those in 2010-11. Success and retention were slightly lower in the fall (success: 69%; retention: 78.6%) than in the spring (success: 73.5%; retention: 80.7%). Students who classify themselves as Filipino or Hispanic continue to have higher success rates than the division and college averages. In contrast to previous years, male students had higher success rates than female students (male success: 74.5%, down slightly from 76.5%; female success: 61.5%, down significantly from 88.3%). In the past two years, the few students in their 30s continue to be less successful than students in other age ranges.

Like other community college programs, the architecture program at CSM serves as a gateway for traditionally underrepresented students. Women and non-white students make up a higher percentage of CSM's architecture students (32% and 60% respectively) than of practicing professionals (20% and 18% respectively, 2009 AIA Firm Survey reported at <http://www.aia.org/about/initiatives/AIAB081825>).

2. Discuss any differences in student success indicators across modes of delivery (on-campus versus distance education). Refer to **Delivery Mode Course Comparison**.

All architecture classes are offered on campus.

C. Program Efficiency Indicators. Do we deliver programs efficiently given our resources?

Summarize trends in program efficiency as indicated in the **Student Success and Core Program Indicators** (LOAD, Full-time and Part-time FTEF, etc.)

LOAD for the architecture program in 2012-13 was 505, down from 544 in 2011-12 and below the college LOAD of 533. Course offerings have been constant over the past three years; the small increase in FTEF from 10-11 to 11-12 and decrease from 11-12 to 12-13 is due to load associated with TBA hours. Of particular concern are low enrollments in the spring major classes (Arch 140 and Arch 220), which have fall major classes as prerequisites. Starting in fall 2014, the program will change the semester offerings of Arch 210 and 220 in order to provide students with a more gradual introduction to the studio environment and – we hope -- increase retention.

Since its return from hiatus in Fall 2007, the architecture program has been staffed by dedicated adjunct instructors who are also practicing architects. This has enriched students' classroom experiences, as they are exposed to the viewpoints and expertise of multiple professionals. However, there is a dire need for release time for a part time instructor to coordinate the program, lead high school and community outreach, modify the curriculum to promote articulation, and lead efforts such as SLO assessment and program review. The full time engineering faculty member, who currently helps with SLO assessment and program review, does not have the discipline expertise or professional experience needed for curriculum development and community outreach.

### 3. Career Technical Education

D. Additional Career Technical Education Data - CTE programs only. (This information is required by California Ed. Code 78016.)

1. Review the program's **Gainful Employment Disclosure Data**, **External Community**, and other institutional research or labor market data as applicable. Explain how the program meets a documented labor market demand without unnecessary duplication of other training programs in the area. Summarize student outcomes in terms of degrees, certificates, and employment. Identify areas of accomplishment and areas of concern.

2. Review and update the program's Advisory Committee information. Provide the date of most recent advisory committee meeting.

#### 4. Additional Factors

Discuss additional factors as applicable that impact the program, including changes in student populations, state-wide initiatives, transfer requirements, advisory committee recommendations, legal mandates, workforce development and employment opportunities, community needs. See [Institutional Research](#) as needed.

**Demand:** The Bureau of Labor Statistics projects a 17% increase in the demand for architects between 2012 and 2022, greater than the average increase for all occupations [Bureau of Labor Statistics, U.S. Department of Labor, *Occupational Outlook Handbook, 2014-15 Edition*, Architects, <http://www.bls.gov/ooh/architecture-and-engineering/architects.htm>]. Regional interest in environmentally sensitive or “green” design continues to be strong and may lead to increased interest in the architecture program. Several students each year continue to find work in local architect offices prior to transfer.

**Curriculum:** The architecture major at CSM helps students to determine well before transfer whether architecture is a good fit for their interests and abilities. This means that some attrition in the program is to be expected. However, low enrollment in the spring major courses (Arch 140, Arch 220) is of concern. Although the program is currently structured and offered so that students can complete both drawing and studio courses in a single academic year, the combined 7-unit load of Arch 666, Arch 120, and Arch 210 in the fall semester is more than many students can manage. Rather than allowing students to “dip their toes in and test the waters” of the major, the courses are currently scheduled to encourage students to “jump into the deep end.” Many are unwilling to do so and some who do may not be able to “learn to swim” quickly enough. Beginning in fall 2014, courses will be scheduled to allow a more gradual introduction to the demands of the field. In addition, increased use of software tools is being incorporated into Arch 120 and 140, in part due to recent changes in the first-year design sequence at Cal Poly San Luis Obispo. Taken together, these changes should provide an easier transition for students entering the program and allow students who complete the program to be better prepared for transfer.

**Facilities:** The architecture studio (19-114) received a major upgrade in the summer of 2013, including new window coverings, new paint, and permanently installed projector, and overhead power for student use. The former darkroom has been cleared and now serves as storage space for student work-in-progress. The studio is now a much safer and more uplifting work environment. The benefits of the improved work environment are not reflected in the student success indicators for 2012-13.

**Support:** The program continues to receive strong support from the local design community. Students will once again have the opportunity to tour the Facebook campus and present to a panel of architects their design work in preparation for the annual Design Village competition at Cal Poly San Luis Obispo. The architecture profession, both locally and nationally, continues to view community college transfer programs as an important means of developing diversity within the profession.

Architecture faculty members, all adjunct faculty, invest many hours in support of the program beyond their formal teaching responsibilities, a level of support that is not sustainable without additional resources. In particular, outreach and curriculum development continue to be hampered by the lack of either a full time faculty member or additional support for adjunct faculty.

#### 5. Planning

##### A. Results of Program Plans and Actions

Describe results, including measurable outcomes, from plans and actions in recent program reviews.

##### **Spring 2013 Plan 1: Architecture Studio Modernization**

With support from the College and from Facilities, the architecture studio (B19 Room 114) has been modernized with new window coverings, new paint, and permanently installed projector, and overhead power for student use. The former darkroom has been cleared and now serves as storage space for student work-in-progress. The studio is now a much safer and more uplifting work environment.

##### **Spring 2013 Plan 2: Architecture Curriculum Review and Restructuring**

No funding was received in support of this plan. However, some progress has been made on curriculum review and restructuring. Based on requirements at transfer schools, additional software tools are being incorporated into Arch 120 and Arch 140 (see Plan 2 below) and course offerings are being staggered to allow a more gradual introduction to the program (see Plan 1 below). Additional restructuring is on hold pending review of transfer requirements (see Plan 5 below), review of the educational and employment outcomes of students who complete the program (see Plan 4 below), and review of the reasons that students do not complete the program (see Plan 4 below).

**Spring 2013 Plan 3: Architecture Outreach and Coordination**

No funding was received to support this plan (see Plan 6 below).

**B. Program Vision**

What is the program's *vision* for sustaining and improving student learning and success over the next three years? Make connections to the [College Mission and Diversity Statements](#), [Institutional Priorities, 2008-2013](#), and other [Institutional Program Planning](#) as appropriate. Address discussion in the Student Learning and Program Data section: SLO assessment results and trends in student success indicators.

**[Note:** Specific plans to be implemented in the next year should be entered in C of the Planning section.

CTE programs must address changes in the context of completion and employment rates, anticipated labor demand, and any overlap with similar programs in the area as noted in D1 and D2 of the Career Technical Education section.]

*Architects*—licensed professionals trained in the art and science of building design—transform society's need for places to live, work, learn, and play into images and plans of buildings that can be constructed by others. The architect is usually the "conductor" of an "orchestra" of related environmental design professionals that includes structural, civil, mechanical, electrical, acoustic, and geotechnical engineers, landscape architects, waterproofing, specialized equipment and facilities consultants as well as interior and lighting designers. The architect synthesizes the needs of the client, the constraints of the site, budget, codes, and building technology with the focused and often disparate expertise of the project design team to create a new three dimensional and material "symphony" of form. This is the essence of the architect's design process -- creative problem solving that begins with the first client meeting or site visit and continues through construction to the location of the last piece of furniture.

The architecture program's vision is to help students with an interest in art, design, and the built environment to develop the creative problem solving skills and discipline knowledge needed for successful transfer and eventual professional employment in architecture, landscape architecture, interior design, and urban planning. Carrying out this vision requires outreach to students, ongoing review and improvement of the curriculum, enhanced communication with transfer schools, and facilities that provide a productive work environment.

Overall, student learning in architecture is strong, with nearly all students accomplishing student learning outcomes at either a rudimentary or advanced level. Enrollment in fall courses is strong. One of the purposes of the architecture major at CSM is for students to determine well before transfer whether architecture is a good fit for their interests and abilities. This means that some attrition in the program is to be expected. However, spring enrollment in the "major" courses (Arch 140, Arch 220) is lower than desired. Students who stick with and do well in the major courses are able to do the level of work required by transfer institutions.

1. To guide future faculty and staff development initiatives, describe the professional activities that would be most effective in carrying out the program's vision to improve student learning and success.

Student learning and students' ultimate success in the architecture field would be enhanced by professional enrichment activities that provide the opportunity for adjunct faculty to learn about new teaching strategies in architecture and to form closer ties with their peers at transfer institutions. For example, professional enrichment funds might be used to sponsor campus visits by architecture faculty and a counselor or advisor.

2. To guide future collaboration across student services, learning support centers, and instructional programs, describe the interactions that would help the program to improve student success.

Architecture students are often unprepared for the math and physics courses required for transfer and can benefit from continued access to tutoring and support in the MRC, ISC, and Learning Center and from expanded access to supplemental instruction in pre-transfer and transfer-level math courses.

3. To guide the **Institutional Planning Budget Committee** (IPBC) in long-range planning, identify any major changes in resource needs anticipated during the next three years. Examples: faculty retirements, equipment obsolescence, space allocation.

See the Resource Requests section below to enter itemized resource requests for next year. Leave sections blank if no major changes are anticipated.

Faculty

As a program staffed by adjunct faculty only, Architecture has an immediate and ongoing need for additional compensation at special rate for curriculum development, out-of-class activities such as design village, and ongoing communication with transfer programs. Costs have been included with Instructional Materials in Section 5 Resource Requests.

Equipment and Technology

Curriculum changes at transfer schools have lead to an increased use of computer-based design tools. With appropriate scheduling and funding, access to computers and software can met through the drafting/CAD lab and the CIS Computer Center.

Instructional Materials

Additional funds for instructional materials and supplies will be needed if curriculum review and restructuring leads to the inclusion of more complex fabrication techniques for models and mock-ups.

Classified Staff

Facilities

C. Program Plans and Actions to Improve Student Success

Prioritize the plans to be carried out next year to sustain and improve student success. Briefly describe each plan and how it supports the **Institutional Priorities, 2008-2013**. For each plan, list actions and measurable outcomes. (Plans may extend beyond a single year.)

**Plan 1**

Title: Course schedule revision to promote persistence (2014 plan 1)

Description

The current course schedule was designed to allow students to complete the major classes in one academic year, with both a studio course (Arch 210, Arch 220) and a drawing/visualization course (Arch 120, Arch 140) in each semester.

However, most students are at CSM for two or three years prior to transfer. Anecdotal feedback from students indicates that they were unprepared for the time demands associated with the architecture major courses. In addition, Arch 100, which satisfies the Arts requirement in IGETC and CSU-GE and serves as recruitment for the major, is only offered once per year and is usually full.

To provide students with a more gradual introduction to architecture and the demands of studio work, the major classes will be

rescheduled so that students can spread their major coursework over two years while still developing a portfolio that supports transfer. In addition, Arch 100 will be offered twice a year and the cross-listing of Arch 120 and Arch 140 in the spring will be considered. This plan does not require additional resources.

Current course schedule:

Fall	Spring
ARCH 666 Introduction to Architecture (1)	ARCH 100 Survey of Modern Architecture (3)
ARCH 120 Architectural + Design Drawing I (2)	ARCH 140 Architectural + Design Drawing II (2)
ARCH 210 Design I (4)	ARCH 220 Design I (4)

Proposed schedule (student's first year in bold; no change in prerequisites; Arch 100 may be taken in any semester):

Fall	Spring
<b>ARCH 666 Introduction to Architecture (1)</b>	ARCH 100 Survey of Modern Architecture (3)
<b>ARCH 120 Architectural + Design Drawing I (2)</b> (cross-list with Arch 140 starting F15 to support spring major cohort)	<b>ARCH 140 Architectural + Design Drawing II (2)</b> (cross-list with ARCH 120 to allow spring start for major classes)
ARCH 220 Design II (4)	<b>ARCH 210 Design I (4)</b>
ARCH 100 Survey of Modern Architecture (3)	ARCH 680 Building Methods and Materials (2)

Action(s)	Completion Date	Measurable Outcome(s)
Modify schedule for fall 2014 (offer Arch 666, Arch 120, Arch 100) and spring 2015 (offer Arch 100, 140 w/120 cross-list, 210)	Spring 2015	(Increased) persistence from Arch 120 into Arch 140; (increased) enrollment in Arch 210
Modify schedule as for fall 2015 (offer Arch 666, Arch 120 w/140 cross-list, Arch 220, Arch 100) and spring 2015 (offer Arch 100, 140 w/120 cross-list, 210, 680)	Spring 2016	(Increased) persistence from 210 into Arch 220; sufficient enrollment to offer Arch 680

**Plan 2**

Title: Increased use of software tools for drawing and visualization

Description
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To maintain articulation with transfer programs and to improve students' preparation for the design sequence (Arch 210, Arch 220) and for upper division work, increase the use of software tools in Arch 120 and Arch 140. Both courses currently provide some exposure to software tools; this is an increase in emphasis rather than a major curricular change. Software costs for this plan are included under instructional materials in Section 5 Resource Requests.

Action(s)	Completion Date	Measurable Outcome(s)
In Arch 120, increase the use of SketchUp (or SketchUp Pro if funded) and introduce Photoshop	Fall 2014	Students leave Arch 120 and enter Arch 210 able to use software tools to support their design work.
In Arch 140, increase the use of SketchUp (or SketchUp Pro if funded) and Photoshop; introduce VectorWorks or comparable package (free version on student computers or professional version if funded)	Spring 2015	Students leave Arch 140 with exposure to industry-standard CAD/BIM software.

### Plan 3

Title: Institutionalization of support for Design Village

Description
<p>The Architecture Club's participation in the annual Design Village event at Cal Poly San Luis Obispo is an important part of the students' professional development. Students spend much of the spring semester developing designs for a habitable structure that meets specified constraints, then make a formal presentation of their work for critique by a panel of practicing architects. The students then spend a weekend in San Luis Obispo. They and teams from colleges and universities throughout the state construct and live in the structures. The project requires many hours of student time under the supervision of the club advisor. Support for the adjunct faculty member who serves as club advisor continues to be an issue. The program is considering several options for institutionalization of support (for example, through a 0.5 or 1 unit project course), but may need additional support for spring 2015. Adjunct faculty hours at special rate for spring 2015 are included under instructional materials in Section 5 Resource Requests.</p>

Action(s)	Completion Date	Measurable Outcome(s)
Investigate options for institutionalization of support for Design Village, including a dedicated project course, incorporation into a broader course, or outside sponsorship.	Summer 2014	Advantages, disadvantages, and costs associated with options are identified and discussed with division dean and Office of Student Life.
Modify or develop course outlines if needed to support best option; submit for inclusion in catalog year 15-16	Fall 2014	Curricular changes, if any, are in place for 2015-16 catalog year.
Note: Bridge funding may be required for spring		

2015.

**Plan 4**

Title: Evaluate recent CSM architecture student experience

Description

To guide program development, work with PRIE to survey recent CSM architecture students to find out how they learned about the program, what worked and didn't work for them while they were taking architecture classes, and what their educational and employment outcomes have been after leaving the program. For students who left without completing the architecture major sequence, learn why they did not complete the sequence. This plan requires assistance from PRIE.

Action(s)	Completion Date	Measurable Outcome(s)
Work with PRIE to develop survey questions and student list	Spring 2014	Survey is ready to administer
PRIE administers survey	Summer 2014	Survey results are available in Fall 2014
Review results of survey	Fall 2014	Review of survey results helps guide program planning for 2015-2016

**Plan 5**

Title: Architecture Curriculum Review

Description

To promote student learning and to maintain and increase articulation with B.A. and B.Arch programs, the architecture faculty must discuss current transfer requirements and any anticipated changes with their counterparts at transfer institutions. While these discussions can begin by phone and through email, the nature of studio work and the use of portfolio review in transfer admissions are such that it is helpful for at least one faculty member to visit U.C. Berkeley, Cal Poly San Luis Obispo, California College of the Arts and possibly additional schools (Cal Poly Pomona, UCLA, University of San Francisco University, Academy of Art) to establish a working relationship with faculty involved transfer admission and portfolio review.

Because the architecture program is staffed by adjunct faculty, additional funding is needed to support the faculty time required for this major review of the curriculum. Funding was requested in the spring 2013 program review, but was not granted. Adjunct faculty hours at special rate are included under instructional materials in Section 5 Resource Requests.



Action(s)	Completion Date	Measurable Outcome(s)
Faculty review current articulation.	Spring 2014	Gaps in articulation are identified.
Faculty interact with counterparts at transfer schools through email and telephone to learn about transfer school curriculum, articulation, and transfer admission process.	Fall 2014	CSM faculty understand the curricular content, objectives, and learning outcomes that are needed for articulation.
Faculty visit transfer schools to review curriculum, student projects, and articulation.	Fall 2014	CSM faculty understand the specific types of student assignments that are needed for articulation and the criteria used the portfolio review.
Curriculum revision:  Course outlines are revised or developed as needed to support articulation and incorporate knowledge gained from student surveys. Course sequencing is revised to promote learning and retention and support timely development of student portfolios.	Fall 2014	New and modified course outlines are submitted to COI by the 2015-16 catalog deadline.
Update transfer guidance: The architecture web page and transfer guide are updated to reflect curricular changes and the suggested sequence of courses. This information is shared with counselors. Updated and new articulation agreements are requested through Articulation Officer. On an ongoing basis, review changes in articulation and transfer requirements.	Spring 2015	Students have access to current transfer information through the architecture website. Counselors are aware of changes. Articulation agreements are in place with transfer schools as appropriate.

**Plan 6**

Title: Architecture Outreach and Coordination

Description
After the curriculum review (Plan 5) is complete and resulting changes have been made, develop well-designed web and print program information. Work with the Outreach Coordinator to increase the program's visibility among high school students in the county. On an ongoing basis, coordinate additional outreach to high school art, design, and graphics classes. Adjunct faculty hours at special rate are included under instructional materials in Section 5 Resource Requests.

Action(s)	Completion Date	Measurable Outcome(s)
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Faculty (possibly with assistance from students through a class or club project) develop a well-designed program flyer or brochure. The brochure is made available in print form and on the web.	Spring 2015	Print copies of brochure are available for outreach and to counselors. Web version of brochure is in place.
Faculty work with Outreach Coordinator to make sure that architecture is appropriately represented in college outreach efforts.	Spring 2015	Outreach Coordinator and others involved in outreach have current program information.
Faculty contact local high schools to set up and carry out additional outreach to art, design, and graphics.	Spring 2015 and ongoing	Outreach activities (e.g. faculty visits to high school; high school student visits to CSM) take place. Students in Fall 2015 classes are surveyed to see if they participated in outreach efforts.

**6. Resource Requests**

Itemized Resource Requests

List the resources needed for ongoing program operation.

Faculty

**NOTE:** To make a faculty position request, complete [Full-time Faculty Position Request Form, AY 2013-2014](#) and email to your Dean. This request is separate from the program review.

Full-time faculty requests	Number of positions
No full-time requests, but please see Instructional Materials for funding at special rate to support adjunct faculty work on program plans.	

Equipment and Technology

Description	Cost
None	

Instructional Material

Description	Cost
Sketchup Pro, for installation in CIS Computer Center (30 stations), Plan 2	\$1000
VectorWorks, for installation in CIS Computer Center (10 stations), Pan 2	\$3000
<b>Adjunct faculty support at special rate (no other place to list!):</b>	
Adjunct faculty hours at special rate for to support spring 2015 design village (Plan 3; 35 hours; does not include benefits)	\$2000 one time
Adjunct faculty hours at special rate for communication with transfer programs, visits to transfer programs, and curriculum development (Plan 5; 35 hours + \$1000 travel costs, does not include benefits)	\$3000 one time
Ongoing adjunct faculty hours at special rate for program outreach and coordination. (Plan 6; 20 hours per year, does not include benefits)	\$1000 per year

Classified Staff

Description	Cost
none	


Facilities

For immediate or routine facilities requests, submit a [CSM Facility Project Request Form](#).

Description	Cost
Storage space for materials used (and reused) in larger-scale design projects such as Design Village.	
During spring semester, space for fabrication and construction of larger-scale projects such as Design Village (space for assembly of three 12'x12'x8' structures).	

**7. Program Maintenance**

A. Course Outline Updates

Review the [course outline update record](#). List the courses that will be updated in the next academic year. For each course that will be updated, provide a faculty contact and the planned submission month. See the [Committee on Instruction website](#) for [course submission instructions](#). Contact your division's [COI representatives](#) if you have questions about submission deadlines.

**Career and Technical Education courses must be updated every two years.**

Courses to be updated	Faculty contact	Submission month
No courses are due for update (last updates were completed in February 2011 for 2011-12 catalog)	Laura Demsetz	


**B. Website Review**

Review the program's website(s) annually and update as needed.

Faculty contact(s)	Date of next review/update
Laura Demsetz	June 2014

**C. SLO Assessment Contacts**

Faculty contact(s)	Date of next review/update
Laura Demsetz	June 2014
