

CPEC STANDARDS

Space and Utilization Guidelines

Space guidelines developed by the California Postsecondary Education Commission (CPEC) calculate a broad envelope of space need for instruction and research (I&R) programs, within which campus planners and others develop priorities for capital projects and for space allocation. They are intended to be used as overall planning and budgeting tools. **Guidelines should not be applied to individual programs** in determining space need because they were developed as campuswide averages. Even using the guidelines to compare divisional space should be done with caution. Roughly, CPEC guidelines quantitatively calculate:

$$(\text{Workload factors}) \times (\text{CPEC guidelines}) = \text{Activity space need}$$

CPEC organizes its standards into four space categories: classroom, teaching laboratory, offices, and research/scholarly activity.

In teaching laboratory and research space, CPEC standards assign categories to programs, each category with its own standards, on the basis of the type and amount of space the program requires. As an example, a program at one campus may use computer laboratories for its research, while the same program at another campus will conduct its research in wet labs, requiring more space and therefore a different space standard category. As another example, very dissimilar programs, such as Engineering and Anthropology may have the same category, because they use space in similar ways.

Because different programs generate different space requirements, the academic program mix is a big driver in the need for space. Many physical and biological sciences programs and some arts programs would generally tend to require more space than most programs in engineering, social sciences, and humanities. When the campus decides that a program will grow faster than some others, it will likely affect the future need for space (and thus change the capacity percentage).

In addition to the “allowed” space per CPEC guidelines, part of the space table analysis is a calculation of changes in inventory as a result of new projects or reassignments of space.

Utilization. CPEC also includes guidelines for the expected utilization of classrooms and teaching laboratories. We collect data on class schedules and class enrollment, combine this data with the inventory of rooms, and then compare the resulting room usage with the following CPEC guidelines (expressed as a “percentage of utilization”):

- Classrooms: 35 weekly station hours utilization ¹
- Teaching labs: 20 weekly station hours utilization

These guidelines are based on: a) an expectation of the number of hours a room is to be *scheduled*, and b) the percentage of stations expected to be *occupied* when the room is scheduled.

¹ Although CPEC guidelines specify classroom utilization of 30 weekly station hours, the State continues to require utilization based on 35 weekly station hours (old 1955 Restudy Standards).

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Classroom standards

The standards for classroom space have three components:

1. Reporting of actual and proposed contact hours in all general and professional programs, for both undergraduate and graduate students;
2. A space standard of 16.5 assignable square feet (asf) per station, which includes support and service space; and
3. A utilization standard of 35 hours per week per station.¹

Formula for computing classroom space allowances

$$\frac{\text{classroom standard of} \\ 16.5 \text{ asf per station}}{\text{utilization standard of} \\ 35 \text{ WSCH per station}} = .47 \quad X \quad \text{total WSCH} = \text{total classroom asf}$$

Teaching lab standards

The standards for teaching laboratory space have three components:

1. Actual and projected laboratory contact hours are the workload input to the space formula, including scheduled lower division, upper division, and graduate laboratory contact hours.
2. Five categories of space per station are used for all teaching laboratories, based on the amount of space required per station, including support and service space. The categories are not based on disciplinary categories or course level, but on the size and type of facility in use.
3. A single utilization standard of 20 hours per week per station is applied to all teaching laboratories.

The standards do not apply to the performing arts (e.g., Music, Theater Arts) due to the wide variance of class sizes taught in performing art facilities and due to the variability in the number of stations these rooms might accommodate.

A definition of the five station size categories for teaching labs follows.

¹ Although CPEC guidelines specify classroom utilization of 30 weekly station hours, the State continues to require utilization based on 35 weekly station hours (old 1955 Restudy Standards).

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Teaching Lab Station Size Categories

Teaching lab size

- | | | |
|---|--------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | 40 asf per station | Includes simple computer station laboratories, case study, and group project laboratories. |
| 2 | 50 asf per station | Includes mix of computer laboratories, behavior science laboratories, simple wet laboratories. |
| 3 | 60 asf per station | Includes wet laboratories, significant material storage requirements. |
| 4 | 75 asf per station | Includes complex wet laboratories with extensive service space, complex design laboratories, CAD/CAM, project studios. |
| 5 | 90 asf per station | Includes complex wet and dry laboratories, equipment-intensive areas, extensive storage and shop requirements, increasing code requirements for life-safety. |

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Office facilities space standards

The office facilities standards provide a single space factor of 195 asf applied to three categories of academic staff in all general and professional disciplines:

1. State-budgeted faculty FTE
2. State-budgeted Teaching Assistant (TA) FTE
3. Postdoctoral scholars

The space allowance for academic offices generated by this standard is intended to be applied on a campuswide basis and covers space for academic offices, administrative staff, and support functions at the departmental level. Note, however, that space allowances for graduate offices are incorporated into the research space category.

Formula for computing office space allowances

Total State-budgeted faculty FTE	X	195 asf per FTE	=	_____
Total State-budgeted TA FTE	X	195 asf per FTE	=	_____
Total postdoctoral scholars	X	195 asf per FTE	=	_____
Campus total office space allowance			=	sum of above

Research space standards

The standards for research space are based on six categories defined by type of space, rather than categories based on discipline names. For each category, a space factor is provided per faculty FTE, graduate student headcount, and postdoctoral scholar. The allowance for research space is intended to cover departmental research space needs ranging from graduate student offices to team laboratories to solo studios. These standards include service and support space, as well as a component of space dedicated to scholarly activities, such as departmental libraries and study space.

A definition of research laboratory space standards follows.

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Research space station size categories

<u>Research Size</u>	<u>Description</u>	<u>Asf per faculty FTE</u>	<u>Asf per grad HC</u>	<u>Asf per postdoc</u>
A	Office-based research activities with limited service and support rooms. May include group project rooms, reading study areas, computer support.	50	50	50
B	Combination office- and laboratory-based activities. Laboratories, project rooms, or observational/ practice facilities often are shared among several research teams. Limited service areas with some special storage needs.	150	100	100
C	Small individual studios, and shared rehearsal facilities, production studios and project areas. Accommodates both solo and group activities. Specialized facilities often used on a shared basis for teaching, research, and performance activities.	150	150	150
D	Laboratories requiring service and support areas ranging from 10-25% of core laboratory area. Includes bench space for individual workstations. Some proportion of the core lab area may be shared among research teams, often housing bulky or infrequently used experimental apparatus.	350	175	175
E	Large “individual” studios for faculty, graduate student, and postdoc creative activity, usually occurring on a solo basis. Specialized support areas may be required for specific equipment-based techniques, such as photography, computing arts, or media editing.	500	250	250
F	Complex wet and dry laboratories, typically assigned to research teams. High density of utility services, fume hoods, other built-in equipment, bench space, and movable equipment. Requires service area and support space ranging from 25-50% of core laboratories.	500	250	250

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CPEC Categories Assigned to UCSC Departments

Unit	Facilities Department Name	Class Lab Category	Research Category
Arts	Art	5	E
	Digital Arts and New Media	5	E
	Drama theater <i>space</i>	--	C
	Film & Digital Media	--	C
	General Arts	1	A
	History of Art & Visual Culture	1	A
	Music	--	C
	Theater Arts	--	C
Humanities	American Studies	1	A
	Feminist Studies	1	A
	General Humanities	1	A
	History	1	A
	History of Consciousness	1	A
	Language Program	1	A
	Linguistics	1	A
	Literature	1	A
	Philosophy	1	A
	Writing Program	1	A
	Physical & Biological Sciences	Astronomy & Astrophysics	5
Chemistry & Biochemistry		5	F
Earth & Planetary Sciences		5	F
Ecology & Evolutionary Biology		4	F
General Physical & Biological Sciences		1	A
Mathematics		1	A
Microbiology and Environmental Toxicology		5	F
Molecular, Cell, & Developmental Biology		4	F
Ocean Sciences		4	F
Physics		5	F
PBSci Division Core Facilities		4	F
School of Engineering		Applied Math and Statistics	4
	Biomolecular Engineering	4	F
	Computer Engineering	5	D
	Computer Science	4	D
	Electrical Engineering	5	D
	General Engineering	5	D
	Technology Management	4	D

CPEC Categories Assigned to UCSC Departments

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Unit	Facilities Department Name	Class Lab Category	Research Category
Social Sciences	Anthropology	3	D
	Economics	1	A
	Education	1	B
	Environmental Studies	4	D
	General Social Sciences	1	A
	Latin American & Latino Studies	1	A
	Politics	1	A
	Psychology	2	D
	Sociology	1	A
General Assignment	General Assignment Classrooms	1	A
	Instructional Computing Labs	1	A

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Space Generated by CPEC Guidelines Example

	<u>Literature</u> ¹	<u>Chemistry</u>
Teaching labs (3,000 weekly student contact hours)	6,000 asf	13,500 asf
Research space (20 faculty, 10 grad students, 10 postdocs)	2,000	15,000
Offices (20 faculty, 5 TA FTE, 10 postdocs)	6,825	6,825
Total	<hr/> 14,825	<hr/> 35,325

¹ In reality, Literature numbers would be much less because the literature program would have few or no postdocs and no weekly student contact hours in teaching laboratories.