

DEFINITION OF STANDARD SPACE
 (Relationship of program and room standard codes)

Space is considered to be "standard space" **and** covered by the CPEC Space Planning Guidelines **if** the following two criteria are met:

1. The room bears a *Room Standard Code* of "S" (standard)
- and**
2. The "standard" room is associated with an instructional program (i.e., program code series 1.1 and 1.2) which carries a *Program Standard Code* of "S" (standard)

If both criteria are not met, the space is regarded as "nonstandard."

	<i>Room Standard Code = S</i> If the room standard code is 'S' (standard), then the room is covered by the CPEC space guidelines	<i>Room Standard Code = N</i> If the room standard code is 'N' (nonstandard), then the room is not covered by the CPEC space guidelines
<i>Program Standard Code = S</i> If the program code is 1.1 or 1.2, then the program standard code is 'S' (standard) and is covered by the CPEC space planning guidelines	STANDARD SPACE = 'S' Program Standard + 'S' Room Standard	NONSTANDARD SPACE = 'S' Program Standard + 'N' Room Standard
<i>Program Standard Code = N</i> If the program code is not 1.1 or 1.2, then the program standard code is 'N' (nonstandard) and is not covered by the CPEC space planning guidelines	NONSTANDARD SPACE = 'N' Program Standard + 'S' Room Standard	NONSTANDARD SPACE = 'N' Program Standard + 'N' Room Standard

ATTACHMENT 16A
COMPARISON OF DATA UNIVERSES FOR UTILIZATION REPORTS AND SPACE ANALYSIS TABLES

Utilization

Analyzes most recent Fall term

Covers only I&R programs (program code series 1.1 and 1.2)

Focuses solely on *measuring existing use* of

- a. Classrooms and seminar rooms (110, 130)
- b. Class laboratories (260)

Excludes service rooms (e.g., classroom service)

Uses Weekly Student Contact Hour data

- must occur in *bonafide* classrooms, seminar rooms, and class labs

Does not use budgeted FTE/headcount data; only WSCH

Space Analysis Tables

Analyzes Fall term over a seven-year period (past; current; 5 projected)

Covers only I&R programs (program code series 1.1 and 1.2)

Focuses solely on *calculating and projecting adequacy* of

- a. Classrooms, seminar rooms, and classroom/seminar service
- b. Class laboratories and class lab service
- c. Offices, conference rooms and office/conference service
- d. Research facilities and research service

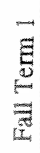
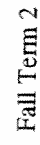
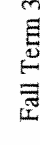
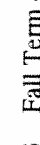
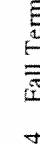
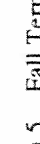
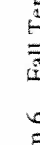
Includes service rooms for classrooms, class labs, offices, research

Uses Weekly Student Contact Hour data

- regardless of the room code in which WSCH data are generated

Applies budgeted FTE/headcount (i.e., faculty, TA, postdoc, grad student) to space standards to calculate space allowances for offices and research facilities in I&R programs

Utilization data universe = 
 Space tables data universe = 

	Fall Term 1	Fall Term 2	Fall Term 3	Fall Term 4	Fall Term 5	Fall Term 6	Fall Term 7
Program code series 1.1 and 1.2							
I&R Classrooms and Seminar Rooms	X	X	X	X	X	X	X
I&R Classroom Service (e.g., shops, storage)	X	X	X	X	X	X	X
I&R Class Laboratories	X	X	X	X	X	X	X
I&R Class Lab Service (e.g., shops, storage)	X	X	X	X	X	X	X
I&R Special Class Laboratories	X	X	X	X	X	X	X
I&R Special Class Laboratory Service	X	X	X	X	X	X	X
I&R Open Laboratories	--	--	--	--	--	--	--
I&R Open Laboratory Service	--	--	--	--	--	--	--
I&R Offices and Conference Rooms	X	X	X	X	X	X	X
I&R Office Service (e.g., shops, storage)	X	X	X	X	X	X	X
I&R Research Facilities, Scholarly Activity	X	X	X	X	X	X	X
I&R Research Service (e.g., shops, storage)	X	X	X	X	X	X	X

Note: See Attachment 12 for room codes covered by the space planning guidelines.

SUMMARY OF 1990 CPEC SPACE PLANNING GUIDELINES

1. The 1990 CPEC Space Planning Guidelines are to be used only for space planning purposes. The space planning guidelines should not be confused with nor be used as architectural or design standards.
2. The 1990 CPEC Space Guidelines are used to calculate "space allowances" or "capacity space" for I&R programs in general and professional subject fields (program codes 1.1 and 1.2). The space guidelines do not cover other programs or activities (e.g., I&R Health Sciences, libraries, organized research).
3. The 1990 CPEC Space Guidelines measure "adequacy" of certain kinds of facilities: specifically, classrooms, class laboratories, research facilities and offices assigned to program code series 1.1 and 1.2.
4. The 1990 CPEC Space Guidelines include space allowances for support facilities (e.g., storage, shops).

Classroom Facilities Room Codes: 110, 125, 130	Assignable Square Feet per	
	Station	Wkly Stdnt Hr
	15	0.55
<i>(see Attachment 16C)</i>		

Teaching Laboratory Facilities	Class / Special Class Laboratory Facilities Room Codes: 260, 261, 265, 711, 716, 721		Assignable Square Feet per	
	Cat	Station	Wkly Stu Hr	
	1	40	2.00	
	2	50	2.50	
	3	60	3.00	
	4	75	3.75	
	5	90	4.50	
<i>(see Attachment 16D)</i>				
Open Labs (Not covered by standards) Room Codes: 270, 275				

Research / Scholarly Activity Facilities Room Codes: 010, 210, 211, 225, 226, 250, 255 510, 515, 560, 565 710, 715, 720	Assignable Square Feet per			
	Cat	Faculty FTE	Grad Stu Headcount	Postdoc Headcount
	A	50	50	50
	B	150	100	100
	C	150	150	150
	D	350	175	175
	E	500	250	250
	F	500	250	250

Office Facilities Room Codes: 310, 320, 35, 340, 345, 722	Assignable Square Feet per		
	Faculty FTE	Tchg Asst Headcount	Postdoc Headcount
	195	195	195

DERIVATION OF THE CLASSROOM SPACE PLANNING GUIDELINE (Based on 1990 CPEC Assumptions and Factors)

Data Elements	<i>UTILIZATION</i>		Comments
	1966 CCHE	1990 CPEC	
Weekly Student Hours per FTE (WSH) =	varies	25	= the 1966 standards varied by discipline and level
Weekly Room Hours (WRH) =	53	42	= State standard for class hours per week per room
Assignable Square Feet per Station =	15	15	= Average ASF per classroom seat
Percent of Station Occupancy =	66%	71.4%	= State standard for station occupancy
Weekly Station Hours (Utilization) =	35	30	= WRH x % Station Occupancy
Student Credit Hour (SCH) =	15	n/a	

Notes:

- Under the 1966 CCHE scheme, classroom space standards varied by discipline and by student level.
- The 1990 CPEC classroom space planning guideline of 0.55 ASF per weekly student contact hour applies to all I&R classrooms regardless of discipline and student level.
- The classroom utilization rate of 30 weekly station hours has not yet been approved by the Legislature. However, the 1990 classroom space planning guideline of 0.55 ASF per weekly student contact hour is based on an assumed utilization rate of 30 weekly station hours.

$$\text{Step 1: } \frac{25 \text{ Weekly Student Hours} \times 15 \text{ ASF per Station}}{42 \text{ Weekly Room Hours} \times 71.4\% \text{ Station Occupancy}} = \frac{375}{30} = 12.51 \text{ ASF per FTE}$$

$$\text{Step 2: } \frac{12.51 \text{ ASF per FTE}}{25 \text{ Weekly Student Hours}} = 0.50 \text{ ASF per Weekly Student Contact Hour for I\&R Classrooms regardless of discipline or student level}$$

$$\begin{array}{l} \text{Step 3:} \\ 0.50 \text{ ASF per Weekly Student Contact Hour for I\&R Classrooms} \\ + 0.05 \text{ 10 percent additional ASF for classroom support} \\ \hline = 0.55 \text{ ASF per Weekly Student Contact Hour for I\&R classrooms} \end{array}$$

OR SIMPLY:

$$\begin{array}{l} \frac{15 \text{ ASF per Station}}{30 \text{ Weekly Station Hours}} = 0.50 \text{ ASF per Station Hour (Weekly Student Contact Hour)} \\ + 0.05 \text{ 10 percent additional ASF for classroom support} \\ \hline = 0.55 \text{ ASF per Weekly Student Contact Hour for I\&R Classrooms} \end{array}$$

TEACHING LABORATORY SPACE PLANNING GUIDELINES
(Derived from 1990 CPEC Factors)

1990 CPEC Factors:

Weekly Student (Contact) Hours per FTE Student (WSH)	=	25
Weekly Room Hours (WRH)	=	25
Percent of Station Occupancy	=	80%
Weekly Station Hours	=	20 Weekly Station Hours (25 Weekly Room Hours x 80% Station Occupancy = 20 Weekly Station Hours)
Assignable Square Feet per Student Contact Hour	=	Determined by Class Laboratory Station Size

<p>Category 1: ASF per Station = 40</p> <p>Simple computer station laboratories, case study and group project laboratories.</p>	<p>Step 1: $\frac{25 \text{ Weekly Student Hours}}{25 \text{ Weekly Room Hours}} \times \frac{40 \text{ ASF per Station}}{80\% \text{ Station Occupancy}} = \frac{1000}{20} = 50.00 \text{ ASF per FTE}$</p> <p>Step 2: $\frac{50 \text{ ASF per FTE}}{25 \text{ Weekly Student Hours}} = \boxed{2.00 \text{ ASF per Weekly Student Contact Hour}}$</p> <p>OR: $\frac{40 \text{ ASF per Station}}{20 \text{ Weekly Station Hours}} = \boxed{2.00 \text{ ASF per Station Hour (Weekly Student Contact Hour)}}$</p>
<p>Category 2: ASF per Station = 50</p> <p>Includes mix of computer laboratories, behavior science laboratories, simple wet laboratories.</p>	<p>Step 1: $\frac{25 \text{ Weekly Student Hours}}{25 \text{ Weekly Room Hours}} \times \frac{50 \text{ ASF per Station}}{80\% \text{ Station Occupancy}} = \frac{1250}{20} = 62.50 \text{ ASF per FTE}$</p> <p>Step 2: $\frac{62.5 \text{ ASF per FTE}}{25 \text{ Weekly Student Hours}} = \boxed{2.50 \text{ ASF per Weekly Student Contact Hour}}$</p> <p>OR: $\frac{50 \text{ ASF per Station}}{20 \text{ Weekly Station Hours}} = \boxed{2.50 \text{ ASF per Station Hour (Weekly Student Contact Hour)}}$</p>
<p>Category 3: ASF per Station = 60</p> <p>Includes wet laboratories, significant material storage requirements.</p>	<p>Step 1: $\frac{25 \text{ Weekly Student Hours}}{25 \text{ Weekly Room Hours}} \times \frac{60 \text{ ASF per Station}}{80\% \text{ Station Occupancy}} = \frac{1500}{20} = 75.00 \text{ ASF per FTE}$</p> <p>Step 2: $\frac{75 \text{ ASF per FTE}}{25 \text{ Weekly Student Hours}} = \boxed{3.00 \text{ ASF per Weekly Student Contact Hour}}$</p> <p>OR: $\frac{60 \text{ ASF per Station}}{20 \text{ Weekly Station Hours}} = \boxed{3.00 \text{ ASF per Station Hour (Weekly Student Contact Hour)}}$</p>
<p>Category 4: ASF per Station = 75</p> <p>Includes complex wet laboratories with extensive service space, complex design laboratories, CAD/CAM, project studios.</p>	<p>Step 1: $\frac{25 \text{ Weekly Student Hours}}{25 \text{ Weekly Room Hours}} \times \frac{75 \text{ ASF per Station}}{80\% \text{ Station Occupancy}} = \frac{1875}{20} = 93.75 \text{ ASF per FTE}$</p> <p>Step 2: $\frac{93.75 \text{ ASF per FTE}}{25 \text{ Weekly Student Hours}} = \boxed{3.75 \text{ ASF per Weekly Student Contact Hour}}$</p> <p>OR: $\frac{75 \text{ ASF per Station}}{20 \text{ Weekly Station Hours}} = \boxed{3.75 \text{ ASF per Station Hour (Weekly Student Contact Hour)}}$</p>
<p>Category 5: ASF per Station = 90</p> <p>Includes complex wet and dry labs, equipment intensive areas, extensive storage and shop requirements, increasing code requirements for life-safety.</p>	<p>Step 1: $\frac{25 \text{ Weekly Student Hours}}{25 \text{ Weekly Room Hours}} \times \frac{90 \text{ ASF per Station}}{80\% \text{ Station Occupancy}} = \frac{2250}{20} = 112.50 \text{ ASF per FTE}$</p> <p>Step 2: $\frac{112.5 \text{ ASF per FTE}}{25 \text{ Weekly Student Hours}} = \boxed{4.50 \text{ ASF per Weekly Student Contact Hour}}$</p> <p>OR: $\frac{90 \text{ ASF per Station}}{20 \text{ Weekly Station Hours}} = \boxed{4.50 \text{ ASF per Station Hour (Weekly Student Contact Hour)}}$</p>

**ASSUMPTIONS ABOUT POPULATION, ACTIVITY AND SPACE FACTORS
on which CPEC Space Planning Guidelines are based**

CLASSROOM FACILITIES

ASSUMPTIONS	WHAT THE GUIDELINES APPLY TO	WHAT THE GUIDELINES DO NOT PROVIDE FOR
<p><i>Population:</i></p> <p><i>Activity:</i></p> <p><i>Space Factor:</i></p> <p><i>Rooms that are covered by the guidelines:</i></p>	<p>Undergraduate Students and Graduate Students for whom there are Weekly Student Contact Hours in...</p> <p>...Regularly scheduled lectures, seminars and discussions</p> <p>0.55 ASF per WSCH (includes support space)</p> <p>110 - Classroom 130 - Seminar 125 - Classroom Service</p>	<p>Students for whom there are no WSCH</p> <p>Unscheduled discussions, tutorials</p> <p>N/A</p> <p>Lectures and seminars may also be held in Conference Rooms, Offices, Scholarly Activity Rooms, Assembly Rooms (non-standard) or any other available and appropriate room. These rooms are not measured against the Classroom allowance.</p>
<p><i>Discussion:</i></p>	<p>The CPEC space analysis tables include both general assignment AND departmentally-managed classrooms and seminar rooms. CCHE had only included general assignment classrooms in its Classroom category. Thus, for some campuses, more classroom space is being counted against the space guidelines than before.</p>	

*Weekly Student Contact Hours: includes only those hours generated in regularly scheduled classes

**ASSUMPTIONS ABOUT POPULATION, ACTIVITY AND SPACE FACTORS
on which CPEC Space Planning Guidelines are based**

TEACHING LABORATORIES

ASSUMPTIONS	WHAT THE GUIDELINES APPLY TO	WHAT THE GUIDELINES DO NOT PROVIDE FOR
<p><i>Population:</i></p> <p><i>Activity:</i></p> <p><i>Space Factor:</i></p> <p><i>Rooms that are covered by the guidelines:</i></p>	<p>Undergraduate and Graduate Students for whom there are Weekly Student Contact Hours in...</p> <p>...Regularly scheduled classes devoted to practice, observation, or experimentation</p> <p>2.00 - 4.50 ASF per WSCH ASF depends on how the department uses space</p> <p>260 - Class Laboratory 261 - Special Class Laboratory 711 - Shop - Teaching Lab 721 - Storage - Teaching Lab 265 - Class Lab Service 726 - Shop Service - Teaching Lab</p>	<p>Students for whom there are no WSCH</p> <p>Unscheduled practice, observation, experimentation; Scheduled practice in the Performing Arts</p> <p>N/A</p> <p>270 - Open Lab (non-standard) 275 - Open Lab Service (non-standard)</p>
<p><i>Discussion:</i></p> <p>Laboratory instruction uses a variety of scheduling approaches for students to complete the required work. Requirements may range from regularly scheduled classes (e.g., 9am - noon, M-W-F), to entirely unscheduled, but required work, completed whenever the student and/or the room are available. Language labs and self-instructional media labs are examples of rooms used on an unscheduled basis (i.e., non-standard Open Labs). Standard Class Labs may also be scheduled for classes for part of the day, with a requirement that students spend additional unscheduled time in the room completing an experiment or project outside of class hours. These unscheduled instructional activities cannot be quantified, so fall outside the scope of what the space allowances provide for.</p>		

*Weekly Student Contact Hours: includes only those hours generated in regularly scheduled classes.

**DESCRIPTION OF STATION SIZE CATEGORIES
FOR TEACHING LABORATORIES**

<u>Categ Size</u>	<u>ASF per Station</u>	Converted to <u>ASF per WSCH*</u>	<u>DESCRIPTION</u>	<u>PROGRAMS ASSIGNED TO CATEGORY**</u>
1	40	2.00	Simple computer station laboratories, case study and group project labs	Area and Ethnic Studies, Classics, Languages and Literature, English Mathematics, Social Sciences, Humanities, Art History, Law, Library Science, Education, Business, Social Welfare
2	50	2.50	Mix of computer laboratories, behavior science laboratories, simple wet labs	Psychology, Computer Programming, Education, Speech, Linguistics
3	60	3.00	Wet laboratories with significant material storage requirements	Natural Resources, Anthropology, Geography
4	75	3.75	Wet laboratories with extensive service space, complex design laboratories, CAD/CAM, project studios	Biological Sciences, Architecture
5	90	4.50	Complex wet and dry laboratories, equipment intensive areas, extensive storage and shop requirements, increasing code requirements for life-safety	Engineering Sciences, Physical Sciences, Studio Art

* See Attachment 16D for conversion of ASF per Station into ASF per Weekly Student Contact Hour (WSCH).

**Programs may be assigned to more than one category, reflecting differences in program from one campus to another.

**ASSUMPTIONS ABOUT POPULATION, ACTIVITY AND SPACE FACTORS
on which CPEC Space Planning Guidelines are based**

RESEARCH FACILITIES

ASSUMPTIONS	WHAT THE GUIDELINES APPLY TO	WHAT THE GUIDELINES DO NOT PROVIDE FOR
<p><i>Population:</i></p> <p><i>Activity:</i></p> <p><i>Space Factor:</i></p> <p><i>Rooms that are covered by the guidelines:</i></p>	<p>Budgeted Academic Staff FTE Graduate Students Postdoctoral Scholars Undergraduates and research staff (by proxy)</p> <p>(a) Group/individual research or creative inquiry/production; (b) Group/individual study and collaboration; (c) Departmental collections, exhibits, library (d) Support for these activities (storage, materials preparation)</p> <p>50 - 500 ASF per workload unit (Actual amount depends on how the department uses space)</p> <p>210 - Research Lab/Studio 211 - Research Office (Graduate students) 250 - Scholarly Activity 710 - Shop 720 - Storage Research Lab or Office Service Room Codes 010, 225, 226, 255, 510, 515, 560, 565, 715</p>	<p>N/A</p> <p>(a) Activities not dependent on workload (e.g., actual or plant studies) (b) Activities providing public service</p> <p>N/A</p> <p>Animal Quarters, Greenhouses, Nonhealth Clinics, Demonstration</p>
<p><i>Discussion:</i></p>	<p>The title of this category, Research/Scholarly Activity, indicates the breadth of the category, extending beyond simply research activities. The space allowance also encompasses all the non-instructional departmental activities that promote scholarship and encourage student-faculty interaction, including use of departmental collections and library materials by staff and students, study and discussion.</p> <p>Not all research takes place in Research Labs or Studios. In disciplines such as Language, Humanities, or Social Sciences, research occurs in the Faculty Office. However, the Faculty Office ASF overstates the amount of space actually being used for office activities, and understates the amount of space being used for research activities. The two space categories overlap to such an extent, that a more valid measure of non-instructional space need is attained when both Office and Research/Scholarly Activity are combined.</p>	

**DESCRIPTION OF STATION SIZE CATEGORIES
FOR RESEARCH / SCHOLARLY ACTIVITIES**

<u>CAT</u>	<u>ASF per Faculty</u>	<u>ASF per Grad</u>	<u>ASF per Postdoc</u>	<u>DESCRIPTION</u>	<u>PROGRAMS ASSIGNED TO CATEGORY</u>
A	50	50	50	Office-based research activities with limited service and support rooms. May include group project rooms, reading study areas, computer support.	Area and Ethnic Studies, Classics, Languages and Literature, English, Mathematics, Social Sciences, Humanities, Art History, Law, Library Science, Education, Business, Social Welfare
B	150	100	100	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.	Geography, Education, Computer Programming, Anthropology, Communications
C	150	150	150	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. Special storage facilities required.	Performing Arts, Anthropology
D	350	175	175	Laboratories requiring service and support areas ranging from to 10 to 25% of core laboratory area. Includes bench space for individual work stations. Some proportion of the core lab area may be shared among research teams, often housing bulky or infrequently used experimental apparatus.	Psychology, Engineering, Natural Resources, Geography, Anthropology
E	500	250	250	Large "individual" studios for faculty, graduate student and postdoctoral 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.	Studio Art
F	500	250	250	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 areas and support space ranging from 25 to 50% of core laboratories.	Physical Sciences, Biological Sciences, Chemical and Materials Engineering, Agricultural Sciences

*Programs may be assigned to more than one category, reflecting differences in program from one campus to another

**ASSUMPTIONS ABOUT POPULATION, ACTIVITY AND SPACE FACTORS
on which CPEC Space Planning Guidelines are based**

OFFICE FACILITIES

ASSUMPTIONS	WHAT THE GUIDELINES APPLY TO	WHAT THE GUIDELINES DO NOT PROVIDE FOR
<i>Population:</i>	Budgeted Academic Staff FTE, Teaching Teaching Assistants (FTE) Postdoctoral Scholars, Departmental administrative staff (by proxy)	N/A (all departmental staff are assumed to be covered by the space guidelines)
<i>Activity:</i>	Regularly scheduled classes devoted to practice, observation, experimentation	N/A
<i>Space Factor:</i>	195 ASF per workload unit	N/A
<i>Rooms that are covered by the guideline:</i>	310 - Academic Office (faculty, TA's, postdocs) 320 - Other Office (administrative) 340 - Conference Room 722 - Storage - Office 335, 345 - Office/Conference Room Service	N/A
<i>Discussion:</i>	The Office Facilities category should not be considered separately from the Research/Scholarly Activity category. Faculty offices are frequently used for the activities that both guidelines cover; i.e., they often double as research space, particularly for those programs not requiring laboratory or studio-type space, such as Humanities, Social Sciences and Languages. Thus, the amount of space used for office/scholarly activity is understated if each is calculated separately. Only by combining office and research/scholarly activity into a single category of "departmental space" can a true picture of space need be determined.	