



Higher Education: **Flexible Facility Utilization Standards**

ELIZABETH G. HILL • LEGISLATIVE ANALYST

In this report we examine current state standards for utilization of classrooms and teaching laboratories at the California Community Colleges, California State University, and University of California. We find that these standards are more complex than is necessary, could be more flexible, and do not encompass year-round operation. As a result, we make recommendations for adjustments to the standards that simplify them, make them more flexible, and state them in terms of hours per year of use in order to accommodate year-round operation. ■

Acknowledgments

This report was prepared by Paul Guyer, and reviewed by Mac Taylor. The Legislative Analyst's Office (LAO) is a nonpartisan office which provides fiscal and policy information and advice to the Legislature.

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INTRODUCTION

To assure that the three segments of higher education use their facilities with a reasonable degree of efficiency, the state has established minimum utilization standards for instructional facilities. These are yardsticks against which the segments are measured to see how efficiently they use their classrooms and teaching laboratories. These standards are important tools that help the segments manage campus buildings, and give the Legislature important information when making funding decisions about constructing new instructional buildings. Conforming to these standards reduces the need to construct new buildings and allows scarce state resources to be devoted to other high priority needs.

The way these standards have been articulated in the past by administrative and legislative actions, however, could be more user-friendly. Restating them in a different way—without changing their substance—would make them easier to understand and apply. There are also changes that could be made that would further simplify their use, address the issue of year-round operation, and provide the segments with more flexibility in use of their facilities.

Why Are Standards Important?

The three segments of higher education in California have about 200 million gross square feet (GSF) of buildings on their campuses. This is about the same amount as the amount of office space in Los Angeles County. The University of California (UC) has over 80 million GSF on its nine campuses, California State University (CSU) has about 60 million GSF on 23 campuses, and the community colleges have about 54 million GSF on 108 campuses.

This represents an investment well in excess of \$60 billion in buildings. As enrollment demand increases, the state and local community college districts will be faced with pressure to construct more buildings. But if some new construction can be avoided through more efficient use of existing buildings—including application of utilization standards—there would be substantial savings. For example, if construction of 1 percent of the amount of current investment in higher education buildings could be avoided, the savings to the state would be hundreds of millions of dollars.

Can Utilization Standards Be More Useful if Stated Differently?

Utilization standards specify the amount of time an instructional station (typically, a desk in a classroom or a work space in a teaching laboratory) is occupied and in use. Utilization standards have been historically developed based on:

- Hours per week of room availability.
- Percentage of time a room is in use when it is available.
- Percentage of stations in a room that are occupied when the room is in use.

When these three parameters are combined, the result is effectively a standard that states the *average number of hours per week an instructional station is expected to be occupied by a student receiving instruction*. In this report we look at three aspects of the state's current utilization standards for higher education:

- First, we look at whether the manner in which the current standards are stated is more complex than necessary and whether a different way of stating them would assist in their understanding and use.
- Second, we examine how minor differences between the standards used by

the three segments could be eliminated with no loss to their efficacy.

- And, third, we address how utilization standards could be stated in order to accommodate measurement of utilization on a year-round basis.

BACKGROUND

Development of the Current Utilization Standards

The development of the current state utilization standards for higher education instruction has evolved over the last 50 years. Some of what has been developed has been in the form of actions by administrative agencies and some in the form of actions by the Legislature. The first elements were established in 1948 in response to Chapter 57, Statutes of 1947, which appropriated funds to the Department of Education and the UC to survey the need for increased facilities for public higher education and to prepare a report of their recommendations. The standards that have been enunciated through the years have not all been approved by the Legislature. Some have been contained in reports, the preparation of which was directed and funded by the Legislature, but without subsequent formal action based on the report's conclusions. Other studies did result in legislative action. In some reports the "standards" enunciated were actually assumptions used by the study team to estimate the capacity of the segments, rather than to set yardsticks by which to measure how

efficiently higher education instructional facilities were being utilized. Some of the more important reports are summarized in the nearby box (see page 6).

This evolutionary process of establishing utilization standards for higher education instructional facilities is summarized in Figure 1.

CURRENT STANDARDS

The state's current utilization standards are those approved by the Legislature for CSU and UC in 1970 for classrooms and 1973 for teaching laboratories, and those established in the California Code of Regulations for the community colleges. These are:

Classrooms. Classrooms are to be available for instructional use between 8:00 A.M. and 10:00 P.M., Monday through Friday. During these periods, classrooms at CSU and UC campuses are to be scheduled at least 75 percent of the time they are available. During scheduled hours at CSU and UC campuses, it is expected that at least 66 percent of the seats will be occupied. For classrooms at small commu-

nity college campuses (less than 140,000 weekly student contact hours), classrooms are to be available 70 hours per week, scheduled at least 48 hours per week, and at least 66 percent of the seats are to be occupied. For large community college

campuses (140,000 or more weekly student contact hours) classrooms are to be available 70 hours per week, scheduled 53 hours per week, and at least 66 percent of the seats are to be occupied.

Figure 1
Evolution of Current Utilization Standards
For Higher Education Instructional Space

Category	Room Availability— (Hours Per Week)	Rooms Assigned		Stations Occupied When Rooms Assigned (Percent)	Stations Occupied (Hours Per Week)
		(Hours Per Week)	Percentage Of Availability		
1948—Strayer					
Classrooms	45	29	65%	no standard	—
Teaching Laboratories	45	29	65	no standard	—
1955—Restudy					
Classrooms	45	36	80%	67%	24.0
Teaching Laboratories	45	24	53	80	19.2
1960—Master Plan					
Classrooms	45	30	67%	60%	18.0
Teaching Laboratories	45	20	44	80	16.0
1966—CCHE^a					
Classrooms	45	34	75%	66%	22.4
Teaching Laboratories					
Lower Division	45	25	56%	85%	21.3
Upper Division	45	20	44	80	16.0
1970—ACR 151^b					
Classrooms	70	52.5	75%	67%	35.0
1973—Budget Act^b					
Teaching Laboratories					
Lower Division	45	27.5	61%	85%	23.4
Upper Division	45	22	49	80	17.6
1980—Community Colleges^b					
Classrooms (large campus)	70	53	76%	66%	35.0
Classrooms (small campus)	70	48	69	66	31.7
Teaching Laboratories	70	27.5	39	85	23.4
1990—CPEC^c					
Classrooms	70	varied	—	varied	30.0
Teaching Laboratories	45	varied	—	varied	varied

^a Coordinating Council for Higher Education.

^b Source for standards currently in use.

^c California Postsecondary Education Commission.

Teaching Laboratories. For all three segments, teaching laboratories are to be available for use between 8:00 A.M. and 5:00 P.M., Monday through Friday. During these periods, lower division (freshman and sophomore) laboratories are to be scheduled at least 27.5 hours per week during these periods and it is expected that at least 85 percent of the work stations will

be occupied. Upper division (junior and senior) laboratories are to be scheduled at least 22 hours per week during these periods and it is expected that at least 80 percent of the work stations will be occupied. This standard applies to all three segments, although by their nature the community colleges have only lower division teaching laboratories.

UTILIZATION STANDARDS: A BRIEF HISTORY

Strayer Report (1948). This study, *A Report of a Survey of the Needs of California in Higher Education*, is usually referred to as the “Strayer Report” after a Columbia University professor who was a leader of the study team. This report estimated the instructional capacity of the CSU and UC systems at that time, based on rooms being available 45 hours per week during the traditional academic year and be used 65 percent of the time (29 hours per week). The report was silent as to any standard for occupancy of desks and teaching laboratory stations during the hours the rooms were in use. No legislative action resulted from the completion of this report.

Restudy Report (1955). Utilization standards for higher education were next addressed in 1955 in a report entitled *A Restudy of the Needs of California in Higher Education*, usually referred to as the “Restudy Report.” The Restudy was intended to update the 1948 Strayer Report and estimate the then-capacity of the CSU and UC systems. The study based its estimates on somewhat greater use of classrooms and lesser use of teaching laboratories than the 1948 study. It also articulated for the first time, standards for occupancy of stations (desks and teaching laboratory work spaces) when rooms were in use. The undertaking of the study was authorized by the Legislature, but the Legislature took no action based on the report’s conclusions.

Master Plan for Higher Education (1960). In 1959 the Legislature directed the state Board of Education and UC to undertake a study that resulted in a report titled *A Master Plan for Higher Education in California*. This report dealt with many aspects of higher education, including utilization of instructional space. This report assumed substantially less intensive use of classrooms and teaching laboratories than the 1955 Restudy Report in estimating the capacity of the segments’ facilities. This more generous set of utilization standards was not approved by the Legislature.

Utilization Standards: A Brief History (continued)

Coordinating Council for Higher Education (1966). The 1960 *Master Plan for Higher Education* created the Coordinating Council for Higher Education (CCHE) to provide a coordinating role among the three segments of higher education. In 1966 the CCHE report, *Space and Utilization Standards, California Public Higher Education*, recommended utilization standards that were somewhat more intensive than those articulated six years earlier in the *Master Plan*. These recommendations were also not explicitly acted on by the Legislature.

Assembly Concurrent Resolution 151 (1970). ACR 151 was the first action by the Legislature to establish utilization standards for higher education. The resolution recognized the increasing demand for access to instructional programs in the evening by working students. It established a standard for classroom availability from 8:00 AM to 10:00 PM (compared to all earlier standards which were based on room availability from 8:00 AM to 5:00 PM), Monday through Friday. The resolution did not address utilization of laboratories.

Supplemental Report of the 1973-74 Budget Act (1973). The *Supplemental Report of the 1973-74 Budget Act* adopted utilization standards for teaching laboratories. Unlike the ACR 151 requirement for classrooms to be available from 8:00 A.M. to 10:00 P.M., the *1973-74 Supplemental Report* required only that teaching laboratories be available for use from 8:00 A.M. to 5:00 P.M.

Community College Construction Act (1980). Chapter 910, *Statutes of 1980*, established the *Community College Construction Act of 1980*, which authorized the Board of Governors of the California Community Colleges (CCC) to establish standards for community college facilities. Pursuant to this authority, the CCC established regulations providing for community college classrooms and teaching laboratories to be available for assignment 70 hours per week. Utilization standards were further defined, including a distinction between large (140,000 weekly student contact hours or more) and small (less than 140,000 weekly student contact hours) campuses.

A Capacity for Learning: Revising Space and Utilization Standards for California Public Higher Education (1990). The CCHE was succeeded by the California Postsecondary Education Commission (CPEC). The *1987-88 Budget Act* appropriated funds to CPEC to conduct another study of utilization of higher education instructional facilities. The CPEC study recommended utilization that varied by time and day that resulted in 30 hours per week of instructional classroom utilization. The study recommended varied utilization standards for the three segments and different types of laboratories. The Legislature took no action based on the recommendations in this report.

ANALYSIS

While the current standards are useful, we believe they could be improved by addressing the following issues:

- ***Could Be Numerically Simplified.*** The fundamental goal of standards for utilization of instructional facilities is to provide a way to measure the number of hours per week (or year, as discussed below) that a station (desk or lab space) is occupied by a student in the course of receiving instruction. The manner in which the current standards are stated, however, requires several assumptions and calculations (see Figure 1, page 5), introducing a mild complexity to use and application that is not needed.
- ***Could Be Further Simplified With Minor Changes.*** The distinction between lower and upper division teaching laboratories at CSU and UC campuses does not appear to serve any important purpose. A single, blended utilization standard for all teaching laboratories would provide further simplification that might aid understanding and use. Also, it is not clear what benefit the state derives from having different utilization standards for “large” and “small” community college campuses.
- ***Do Not Address Utilization on an Annualized Basis.*** The standards address utilization of instructional facilities on an “hours-per-week” basis only but are silent as to the “hours-per-year” of

utilization. Since year-round operation is one of the most important opportunities the segments have to increase their instructional capacity without constructing more new classroom and teaching laboratory buildings, this is a significant area the current utilization standards do not address.

We discuss these opportunities for improvements in more detail below.

Simplify the Numbers

Understanding and application of the state’s current utilization standards could be enhanced by restating them in terms of:

Hours of station use per week.

This restatement would make no changes in the existing standards, but would facilitate their use. For example, to determine the number of hours per week that a classroom station should be in use under current standards requires that three numbers be multiplied together (70 hours per week x 75 percent classroom availability x 67 percent station occupancy equals 35 hours per week). Understanding and use of the classroom utilization standards could be simplified by restating it as:

CSU and UC Classrooms: ***35 hours of station use per week.***

Community College Classrooms:
Large Campuses—35 hours of station use per week. **Small Campuses**—31.7 hours of station use per week.

Similarly, the utilization standard for teaching laboratories for all three segments could be simplified by restating it as:

Teaching Laboratories: Lower Division—23.4 hours of station use per week.
Upper Division—17.6 hours of station use per week.

Simplify the Standards

Three minor but substantive modifications to the standards could provide the segments with more flexibility, and provide more user-friendly standards.

Days and Hours of Availability. Current utilization standards specify that classrooms must be available for use 8:00 A.M. to 10:00 P.M., Monday through Friday, and teaching laboratories from 8:00 A.M. to 5:00 P.M., Monday through Friday. From the perspective of efficient utilization of instructional facilities, specification of the days and hours of operation introduces an unnecessary rigidity. Inclusion of requirements for days and hours of room availability adds nothing to the fundamental yardstick for measuring utilization—*hours of station use per week*. For example, a strict interpretation of current standards could mean that hours of instruction delivered on weekends or in teaching laboratories after 5:00 P.M. during the week cannot be counted for credit in determining a segment’s actual utilization. This is not a desirable result

because, among other things, it might encourage the segments *not* to make courses more accessible to the increasing number of students who work during the day. This unnecessary requirement in current instructional facility utilization standards could be eliminated if the state were to:

Delete requirements for days and hours of room availability.

Single Standard for Teaching Laboratories. Currently, UC and CSU have different standards for upper and lower division teaching laboratories. The original rationale for providing separate standards is not clear, and in any event does not appear to have any current justification. For example, in the UC’s reports of the actual utilization of teaching laboratories on its campuses, it notes that “The university does not distinguish among levels of instruction in its inventory of rooms, since teaching laboratories may serve each population in a given week, or even simultaneously, depending on class enrollment and scheduling. The average of the two standards (23.4 hours for lower division, 17.6 hours for upper division) results in 20 hours per week expected utilization . . .” There is nothing to indicate CSU’s utilization of teaching laboratories by upper and lower divisions is any different than UC’s. Moving to a single standard for all teaching laboratories would result in only a modest decrease in the standard for community colleges from 23.4 to 20 hours per week. Eliminating the distinction between lower and upper division teaching laboratories would remove an artificial reporting complexity for the segments that has no discernible benefit to the state. Therefore, we recommend that the state:

Establish a single standard for teaching laboratories (without regard to upper or lower division distinction) of 20 hours of station use per week.

Eliminate Large/Small Distinction for Community College Classrooms. It is not clear why the state needs to continue different utilization standards for classrooms on small (31.7 hours of station use per week) and large (35 hours per week) community college campuses. By comparison, the CSU system does not make this distinction, even though it has campuses with enrollments that would qualify as “small” under the CCC guidelines. In order to keep the standards as simple and straightforward as possible, the state could:

Establish a single standard for classrooms (without regard to campus size) of 35 hours per week of station use.

Restating current standards with these three changes would further facilitate their use by reducing reporting complexity and giving the segments flexibility in meeting standards.

YEAR-ROUND OPERATION

Given the Legislature’s stated policy goal of year-round operation of higher education facilities, the most significant shortcoming of current utilization standards for higher education instructional facilities is that they do not establish a criteria for hours of station use *per year*; they address only station use *per week*. This can be addressed by restating the standards in terms of nominal hours per year. Figure 3 shows how this can be done.

With the conversion of the utilization standard from an “hours of station use per week” to “hours of station use per year” a better insight is provided into how efficiently campuses are utilizing existing facilities. The modified utilization standards would be:

Classrooms: 1,820 hours of station use per year.

Teaching Laboratories: 1,040 hours of station use per year.

While Figure 3 shows a utilization calculated on a 52-week year, this does *not* mean the segments would be expected to fill classrooms and laboratories every week of the year. Schools on a quarter system, for instance, would be “credited” for utilization for 13 weeks even though classes were held for only 10 weeks. Similarly, schools on a semester system would be credited for 17.3 weeks (one-third of 52), even if the classes are held for a lesser time.

The use of an instructional facilities utilization standard based on student contact hours per year would give a complete picture of the amount of additional instructional capacity at the segments if their facilities were used year-round. For instance, Figure 4 shows actual 2001-02 space utilization by each segment as expressed in yearly student contact hours (YSCH), and compares this with the YSCHs that could be accommodated under our proposed year-round utilization standard. As the figure shows, the segments in total are using only about 75 percent of their current capacity.

More specifically, the figure illustrates that between them CSU and UC have facilities that could accommodate about 67 million more student contact hours per calendar year by

using their instructional facilities at our proposed state utilization standard year-round. This means over 100,000 additional full-time equivalent (FTE) students might be accommodated each year between the two segments. This is about the equivalent of UC's three largest campuses—Los Angeles, Berkeley, and Davis. Figure 4 also shows that all of the 108 community college campuses taken together could accommodate

over 200 million more student contact hours per calendar year by using their facilities at the state utilization standard year-round. This means more than 300,000 additional FTE students could be accommodated each year. This is more than twice the instructional capacity of the ten campuses in the Los Angeles Community College District.

HOW THESE STANDARDS CAN BE HELPFUL

These simplified utilization standards would make it easier for the Legislature and others to use them when making decisions about funding construction of new instructional buildings. Two

simple numbers—1,820 for classrooms and 1,040 for teaching laboratories—would define the number of hours per year instructional stations at campuses are expected to be occu-

Figure 3
Modification of Current Utilization Standards to Accommodate Year-Round Operation^a

	Current Standard (Hours of Station Use Per Week)	Weeks Per Calendar Year	Converted Standard (Hours of Station Use Per Calendar Year)
Classrooms	35	52	35 x 52 = 1,820
Teaching Laboratories	20	52	20 x 52 = 1,040

^a Restated and simplified as discussed in the text, including elimination of the distinctions between upper and lower division teaching laboratories, and large and small community college campuses. Instructional stations that are occupied for a term are assumed to be occupied for the number of weeks in the term, including time allocated for vacations and holidays.

Figure 4
Capacity of Instructional Facilities if Used Year-Round At State Utilization Standard

Segment	Actual Utilization, 2001-02 (YSCHs in Millions) ^a	Utilization Standard (YSCHs in Millions) ^a	Actual Utilization As Percentage of Utilization Standard
Community Colleges	536.2	745.3	72%
California State University	182.0	213.0	85
University of California	101.0	136.8	74
Totals	819.2	1,095.1	75%

^a Yearly student contact hours.

pied. If a campus meets these standards, construction of new instructional space may be justified; if not, construction may not be warranted.

Simplified utilization standards would also give campuses more flexibility in meeting them. Campuses would no longer need to be con-

cerned with specific days and the time-of-day that stations are occupied. They would only have to meet requirements that classroom and teaching laboratory stations be occupied for instructional purposes the specified number of hours in a calendar year.

RECOMMENDATIONS

Current state standards for utilization of higher education instructional facilities can be simplified and made more flexible. This would make them easier to understand and apply. We therefore recommend the Legislature restate current state utilization standards for higher education instructional facilities on the basis of “annual hours of station use per year.” This would both simplify the standards and accommodate year-round operation.

- For classrooms, we recommend the standard be restated as 1,820 hours of station use per calendar year.
- For teaching laboratories we recommend the standard be restated as 1,040 hours of station use per calendar year.

The adoption of these standards would:

- Eliminate requirements for days and hours of room availability. (This would allow the segments flexibility in meeting the state requirements.)
- Eliminate the distinction between upper and lower division teaching laboratories.
- Eliminate the different classroom utilization standards for “large” and “small” community college campuses, and instead apply the same standard of 1,820 hours of station use per calendar year to all community college campuses.

Adoption of these recommendations would assist the Legislature, the segments, and the administration in its assessment of and deliberations on higher education infrastructure proposals.