

Assembledge⁺

PAULIEN & ASSOCIATES, INC.
PLANNING CONSULTANTS



CSU San Bernardino

Assessment of Enrollment Demand, Utilization and Space Needs

Compiled October, 2016

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Assembledge+

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DEFINING TRENDS IN ENROLLMENT GROWTH AND SPACE NEEDS BY COLLEGE

March 21, 2016

1. Trends in Facility Use and Near-Term Potentials for Accommodating Enrollments by CSUSB Colleges and the Pfau Library

As part of our analysis of current and project space use at CSUSB, the Master Plan team of consultants representing Assembledge+ and Paulien & Associates met with representatives from the Colleges of Natural Sciences, Business and Public Administration, Social and Behavioral Sciences, Arts & Letters and Education as well as representatives from Academic Research and the Pfau Library in a series of individual meetings on September 15 and 16, 2015. Information from these colleges was also obtained in written form in response to prepared questions and as a follow-up to the meetings. Key insights from those meetings in conjunction with information obtained from CSUSB Capital Planning, Design and Construction, Institutional Research and the Chancellor’s Office are summarized below. As a further context for understanding the near-term needs for the range of academic spaces needed at CSUSB main campus, the following tables are provided: 1) “Trends in College Majors” which in a very broad way attempts to track the overall change in CSUSB headcount enrollments over the six year period ending in 2014; 2) “Classroom Utilization Analysis by Building Summary” and 3) “Classroom Utilization Analysis by Capacity Summary.” The latter two tables identify the utilization of campus classrooms (lecture) by buildings and by classroom size across the campus. Importantly, these classroom utilization tables indicate classroom utilization based upon the utilization standards used by the CSU Chancellor’s Office. Based upon these standards a number of classroom facilities although often perceived as utilized to their capacity, actually have additional capacity when compared to the Chancellor’s Office standards. Given this situation, the range of solutions to addressing academic space needs at CSUSB identified in Section 1 above are available to provide the spaces needed.

Trends in College Majors			
College	Headcount		Percent Difference
	Fall 2008	Fall 2014	
Arts & Letters	3,306	2,673	-19.15%
Business & Public Admin.	3,324	3,433	3.28%
Education	1,992	978	-50.90%
Natural Sciences	4,248	5,772	35.88%
Social & Behavioral Sciences	4,161	5,166	24.15%
University Studies	615	930	51.22%

Note: Data from CSUSB Office of Institutional Research

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Classroom Utilization Analysis by Building Summary

Building Name and ID	No. of Rooms	Average Room Size	Average ASF per Station	Average Section Size	Weekly Station Hours	CSUSB Standard WSH	Average Weekly Room Hours	Hours in Use Student Station Occupancy %	Utilization as a Percent of the Standard	
Biological Sciences	BI	1	421	15	23	26.7	35	33	81%	76%
Chaparral Hall	CH	2	1,042	15	54	15.6	35	19	81%	45%
Chemical Sciences	CS	5	1,077	14	57	31.5	35	37	73%	90%
College of Education	CE	12	818	16	42	30.7	35	38	73%	88%
Health & Physical Education Complex	HP	4	1,067	18	37	26.0	35	40	60%	74%
Jack H. Brown Hall	JB	21	730	15	39	32.6	35	40	80%	93%
John M. Pfau Library	PL	14	627	18	27	23.8	35	30	74%	68%
Physical Education	PE	1	793	20	33	29.6	35	36	83%	85%
Physical Sciences	PS	6	1,061	14	71	37.3	35	35	74%	107%
Social & Behavioral Sciences	SB	11	728	16	39	39.7	35	43	78%	113%
Temporary Modular Classrooms 212	TC	5	774	16	39	25.1	35	30	80%	72%
University Hall	UH	25	599	14	31	29.1	35	42	73%	83%
Visual Arts Center	VA	2	1,292	16	74	31.8	35	24	86%	91%
<i>Total No. of Rooms = 109</i>	Average	759	16	39	30.9	35	38	75%	88%	

WSH = Weekly Station Hours

53 room hours @ 66% student stations occupied equals the CSU standard of 35 weekly station hours

Classroom Utilization Analysis by Capacity Summary

Classroom Capacity Grouping	No. of Rooms	No. of Seats	Average Room Size	Average ASF per Station	Average Section Size	Weekly Station Hours	CSUSB Standard WSH	Average Weekly Room Hours	Hours in Use Student Station Occupancy %	Utilization as a Percent of the Standard
20 and Under	7	140	332	17	14	16.5	35	28	58%	47%
21 -25	3	71	400	17	16	17.2	35	24	71%	49%
26 - 30	39	1,113	447	16	23	29.4	35	37	79%	84%
31 - 35	5	166	537	16	23	28.8	35	41	71%	82%
36 - 40	7	280	718	18	31	29.7	35	38	78%	85%
41 - 50	10	494	705	14	30	22.0	35	36	61%	63%
51 - 60	24	1,399	904	15	44	30.4	35	40	75%	87%
61 - 75	4	291	1,062	15	48	22.8	35	32	70%	65%
76 - 100	2	176	1,263	14	70	35.0	35	44	79%	100%
101 - 150	4	550	2,139	16	123	42.0	35	46	91%	120%
151 - 250	3	612	2,460	12	164	33.5	35	40	84%	96%
251 and Over	1	293	2,596	9	250	45.1	35	53	86%	129%
<i>Total No. of Rooms = 109</i>	Average	759	16	39	30.9	35	38	75%	88%	

a. College of Natural Sciences (CNS). At the top of the colleges in terms of student demand and offering the STEM and health-related disciplines both predicted as future engines of the national economy, the College of Natural Sciences has experienced significant recent growth that is expected to continue as a major focus of student enrollments. Of note:

- The Pre-Nursing and Nursing programs are currently impacted due to a shortage of available instructors and local participatory institutions; Even given a removal of these barriers, present issues of the relatively high cost of building additional nursing type facilities place significant constraints upon the expansion of these programs;
- The current Computer Science and Engineering program is delivered in part from a temporary and functionally inappropriate facility, temporary Building 301; See Section 1.b above for a description of the proposed new CEL facility the construction of which also provides an opportunity to address procuring a

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better replacement facility on campus for the Building 301 Computer Science and Engineering Lab. This less than adequate facility for this important program is a particular issue when seeking new faculty and/or program head.

- Classroom (Lecture) space particularly in the 60-station and larger sizes is needed by several departments (Physical Sciences in particular);
- Availability of teaching labs are at their limit under current scheduling in Biology, Chemistry/Bio Chemistry and Kinesiology; A series of four retrofit projects in the Chemical and Physical Sciences buildings and in the Physical Education facility are now under development that would help address some of the current pressures for appropriate spaces.²
- The general lack of Research Laboratories experienced in CNS and throughout the university limit the ability to attract tenure-track faculty members. As an immediate move towards addressing this issue, a modest retrofit project in the Biological Science Building would covert storage spaces into three research laboratories totaling about 850 ASF.²
- Faculty offices are needed to accommodate future demands, and in some cases such as for the Mathematics and Physics departments, existing faculty demands for office space cannot be met.

b. College of Social and Behavioral Sciences (CSBS). Consistently among the top for campus wide total and growing student enrollments, the CSBS continues to add new career-focused undergraduate programs as well as new Master's programs. Among its leading academic programs are those in Psychology and Criminal Justice. Most of its programs are offered in the Social and Behavioral Sciences Building (SB). CSBS has been at the forefront in class scheduling having worked with 'non-traditional' hours of operation including offering various sections in weekday late-night (8:00-10:00 PM), Friday and Saturday times. Summary findings for the CSBS include:

- SB is nearing its capacity for offering CSBS instructional sections;
- SB has no capacity to offer faculty offices to new and in some cases existing faculty;
- The current need for additional classrooms falls in the 80 to 100 student station size;
- The general lack of Research Laboratories experienced throughout the university is particularly acute in the Psychology Department, limiting the ability to attract tenure-track faculty members.

c. College of Arts and Letters (CAL). Although CAL has experienced recent declines mirroring national trends as students seek more employment-oriented majors, recent

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increases in new students appears to be reversing this trend. Also contrary to this trend has been strength in Art and Communications over the 2008 to 2014 period where those majors have grown. Further, as these majors appear to represent enhanced employment opportunities in the communications and media arts fields, it is believed that if appropriately supported by the university this emphasis could become a center for continued student growth. Although currently small in relative size of enrollments, student demand has also grown in the critical languages of Arabic, Chinese, Korean and Japanese. Finally, the CAL continues to offer required backbone undergraduate courses such as English and Oral Communications that will grow at least as fast as general freshmen enrollments. There is also a need for large lecture halls for required General Education Classes to serve the overall student body. A summary of current space needs are as follows:

- Large lecture hall/classrooms of a 100+ student station capacity;
- Computer labs to support strong student interest in Art and Communications Studies;

d. College of Business and Public Administration (CBPA). The CBPA is a major college at CSUSB which has grown slightly in relation to other colleges but with its employment-oriented potential will continue to attract students in all segments of its offerings. Also reinforcing its continued success, the college attracts significant numbers of graduate/post-baccalaureate students in Business Administration, Public Administration and Accounting and has an equally significant enrollment among international students. Of note for its employment potential, its emerging importance to the 21st century economy and its connection with major players in government and private industry are its several cybersecurity programs organized under the Cyber Security Center. All of these factors will contribute to CBPA needs for additional academic space as the campus grows. Most of the CBPA programs are offered in Jack H. Brown Hall (JB) which currently also houses a number of classrooms and offices on the 3rd and 4th floors utilized primarily by the College of Natural Sciences (Mathmatics). Additionally, CBPA maintains a number of programs that serve the community at large—a few of which could benefit with better off-campus access. The following near-term space related issues associated with the CBPA are noted:

- Some potential exists for combining smaller classroom/laboratories into larger classrooms with a 60+ student station capacity.
- To maintain and create their academic synergies, entire floors and programs such as the growing Cyber Security Center should be conceptualized as part of any near-term space plans and reorganizations. As part of this initiative, a plan to add classroom, teaching lab and collaboration spaces to the ground floor of Jack Brown Hall is under development.³

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- Various academic spaces could be enhanced through reorganization and/or through upgraded technology. Plans for the reorganization of a second floor study space into a student study lounge with expansions into an adjacent unutilized outdoor space are exemplary of this approach and have application beyond the Jack Brown building. Re-envisioning existing classrooms as flexible learning spaces capable of multimodal learning has been proposed by CBPA leadership.
- The CBPA incubator/accelerator now located in JB is a candidate for location off-site/off-campus. The proposed San Bernardino downtown center represents a good near-term potential location for such a facility.
- Movement of some CNS programs out of JB may help the CBPA achieve co-locational academic synergies;
- Additional student-oriented research space is needed to support the evolving student learning modes.

e. College of Education (COE). The College of Education has experienced a decline in enrollments over the last several years attributable to reduced demand for teacher training and teachers when local school districts imposed hiring freezes in the downturned economy. With improved economic conditions the demand for teachers/teacher credentials is expected to rise to previous levels in the coming years. As a result of recent weaker enrollments and because a large proportion of COE courses are offered at night and on Saturdays to working professionals, various classroom and laboratory spaces in the College of Education Building (CE) have additional utilization capacity. These spaces are therefore available for more efficient scheduling and as a number of the COE laboratories were designed as flexible learning spaces to accommodate emerging pedagogical models these labs may be configurable and available to various non-COE users. Plans are currently underway to reconfigure some of these spaces into 4 general purpose classrooms. Of interest as well are a number of successful COE service-oriented programs that are delivered at least in part in community locations, directly accessible to participants, users and consumers. Near-term space initiatives for the COE follow:

- Continued scheduling of academic spaces located in the COE building including classrooms, teaching laboratories and faculty offices for non-COE users;
- Adaptation of multi-modal learning laboratories for use by non-COE programs needing specific and/or flexible learning environments; Some laboratories could be configured as enhanced lecture classrooms;
- Location of various programs into off-campus sites. Of particular potential are some of the veteran's programs now housed in the Watson Center that could be located in a community site near program participants.

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f. John M. Pfau Library (PL). Located in the center of the campus and in many ways acting as the center of campus life, the Pfau Library represents a unique facility that can drive and shape near-term and long term solutions to the envisioning of campus academic spaces. As the campus moves towards a more '24/7' operational environment both to accommodate near-term space shortfalls and as a maturing campus with an increasingly residential component, the Pfau Library will become one of the key hubs in support of that vision. Likewise as student learning modalities change to those demanding more student-to-student as well as technology assisted study, PL will continue to reconfigure some of its space into these types of study spaces. In addition, library spaces for individual study have been identified as a primary need by 86 percent of students participating in a recent library survey. Given the current configuration of the PL which includes a significant footprint devoted to traditional volume stacks and study carrels several ideas for reconfiguring the PL to serve both a near-term and long-term vision have been put forth. Use of the PL facility to address near-term campus wide academic needs should be generally viewed as a temporary solution—as the Pfau Library in the long-term will need to continue as the general purpose research and study center of the university. Near-term initiatives are outlined here:

- Widespread efficiency-oriented renovation of the PL spaces is needed to address activity layout, lighting, and access to both public and portable private technology (electric outlets and Wi-Fi access). Renovation should be coordinated with overall plans for each floor that anticipate the larger Pfau Library vision;
- Consolidation of some stack areas through the use of compact shelving to increase new space to be devoted to student study and academic spaces;
- Consolidation of some stack areas through off-site storage of lesser used materials to increase new space to be devoted to student study and academic spaces;
- Better utilization of current carrel space through the use of linear wall and row carrels;
- Reclaimed PL spaces for expanded academic use include spaces for temporary classrooms and/or offices; and graduate student study cubicles;
- Creation of a 24-hour student study area on the first floor through the integration of the existing west side study area and Wedge computer labs into an interconnected space sealed off by a glass partition/access door from the other portions of the first floor;
- Reconfiguration of and consolidation of related functions into the PL basement;
- 'Reclaiming' of two outdoor areas on the first floor (adjacent to north and south sides of the building) as enclosed spaces for student study.

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g. Academic Research. Academic research as an activity in the California State University system, has grown steadily over the years and yet the related spaces needed to conduct various forms of research has not matched the need. Conceived as primarily teaching universities, CSU standards for research space developed in 1960 were and are oriented to undergraduate and graduate research space for student use. These standards according to CSU Chancellor's Office staff do not meet the student research demands of today's science disciplines.¹ Further, there is no official provision for faculty research space. In today's CSU academic environment, professors, particularly tenure-track professors, often must engage in research activities to stay current in their fields and as part of the publishing enterprise—thus access to research space has also become an important need in support of professorial life, faculty success and a driver for attracting new qualified and superior faculty.

The following research-related trends have been observed for CSUSB. CSUSB ranks number 10 among the 23 CSU campuses in terms of overall research funding. Viewing graduate studies at CSUSB, based on Fall enrollments (Headcount) for the 2011 to 2015 Academic Years, new graduate (Masters + EdD) enrollments have grown slowly but steadily.

- **Research Space.** As noted above the standards for research space in the CSU system do not address modern research needs for graduate students nor faculty. Notwithstanding this situation, Paulien & Associates (February 24, 2016) using CSU standards, identified a current deficit of 7,749 ASF in graduate research space at CSUSB.⁴
- **Academic Centers.** CSUSB colleges and academic programs have developed a number of centers over the years in response to faculty interest, grant funding availability and/or in response to regional needs. Many if not most of these centers are academically oriented serving the educational needs of students and faculty. Again, because of the limited CSU space entitlement for research and other 'non-traditional' academic spaces, centers generally co-locate within academic program spaces on campus. Often faculty use their own office and other departmental offices and facilities to help support center activities putting pressure on the availability of space for new full and part-time faculty members. Given this situation, in the near term, it is recommended that centers primarily oriented to public activities as well as non-state supported programs currently operating out of faculty office space, be considered for relocation into off-campus facilities. A preliminary listing of those candidate centers, institutes and programs for relocation into an off-campus location(s) is given here.

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Candidate Centers and Institutes for Off-Campus Location
Center for the Study of Correctional Education
Community Counseling Center
Inland Empire Center for Entrepreneurship
Institute of Applied Research and Policy Analysis
Institute for Research, Assessment & Professional Development
Leonard Transportation Center
Palm Springs Institute for Environmental Sustainability
University Center for Developmental Disabilities
Water Resources Institute

- **CSUSB 2015-2020 Strategic Plan—Goal 2/Objective 2:** By fall 2017, create a Center of Excellence to promote high impact research, creative activities, and scholarship involving interdisciplinary and international collaborators, and develop a tracking system to do the same.

Footnotes:

- 1 See Appendix E, in Stacy Wilson, Mallory Newell, and Ryan Fuller. "California State University Undergraduate Demand Projections, 2009–2019; Ready or Not, Here They Come." CEPC Report 10-05, March 2010.
- 2 CSUSB Facilities Planning, Design & Construction, "College of Natural Sciences, Proposed Projects" (ca. February 2016).
- 3 CSUSB Facilities Planning, Design & Construction (ca. February 2016).
- 4 Paulien & Associates. "California State University San Bernardino, Utilization and Space Needs Analysis" (February 24, 2016). 18 pages. Using two alternative methodologies, Paulien & Associates estimated a current space deficit of 3,130 ASF or alternatively a larger potential need of 35,954 ASF.

Fall 2014 Departments by Enrollment (Min. 100)

College	Department	2011	2012	2013	2014	Increase (Count)	Increase %
SBS	PSYC	1531	1654	1769	1965	434	22%
NS	BIOL	922	1128	1185	1350	428	32%
NS	CSCI	493	610	676	833	340	41%
NS	HSCI	511	615	671	754	243	32%
BPA	IST	-	29	152	236	207	88%
NS	KINE	588	717	748	779	191	25%
BPA	MGMT	824	924	997	1008	184	18%
SBS	SOC	383	459	467	514	131	25%
UNV	UDCL	454	482	388	550	96	17%
SBS	HD	199	248	247	280	81	29%
NS	CHEM	246	275	304	316	70	22%
SBS	SW	398	412	460	455	57	13%
A&L	COMM	513	564	557	564	51	9%
NS	MATH	403	458	461	454	51	11%
BPA	MKTG	372	386	434	413	41	10%
EDU	ECLG	104	102	112	136	32	24%
A&L	ART	442	493	463	463	21	5%
BPA	ACFN	1128	1130	1081	1145	17	1%
SBS	CJUS	1064	1136	1133	1076	12	1%
BPA	PA	297	300	300	307	10	3%
UNV	UNV	308	278	288	309	1	0%
SBS	SSCI	110	110	99	107	-3	-3%
SBS	PSCI	216	217	203	210	-6	-3%
A&L	ENG	500	521	480	485	-15	-3%
EDU	ESPE	128	106	99	113	-15	-13%
A&L	SPAN	131	126	128	110	-21	-19%
SBS	HIST	270	251	235	245	-25	-10%
BPA	ADMN	281	244	226	240	-41	-17%
EDU	DTE	431	370	427	385	-46	-12%
A&L	LBST	1046	912	797	847	-199	-23%
NS	NURS	1508	1617	1579	1143	-365	-32%

**Student Demand Overview
 for the
 Campus Master Plan
 California State University, San Bernardino**

September 14, 2015

As part of the master planning process, Paulien & Associates, Inc. estimated student demand using participation rates derived from Fall 2014 enrollment and 2014 population estimates using data provided by CSUSB and the California Department of Finance. Participation rates for Fall 2025 were developed based on changes in population and demographic data.

Participation rates were calculated at the county level. Participation rate can be defined as the percent of the total county population that is enrolled or “participating” in an institution of higher education in a given area. A participation rate is usually expressed as a percentage, as noted in the formula:

$$\text{Participation Rates} = \frac{(\text{Headcount})}{(\text{Population})} \times 100$$

Participation Rate Analysis

County	Fall 2014 Headcount Enrollment	2014 Population Estimate	2014 Participation Rate
Riverside Co	5,693	2,294,333	0.25%
San Bernardino Co	10,462	2,096,123	0.50%
Other California Co	1,324		
Other US/Foreign	1,473		
Total	18,952	4,390,456	

Using Fall 2014 CSUSB enrollment data and 2014 population data for Riverside and San Bernardino counties, participation rates were calculated at 0.25% and 0.5% respectively. It should be noted that 85.2% of the students attending CSUSB in Fall 2014 resided in one of these two counties.

Population Estimates from CA Department of Finance; 2010-2060

Given expected changes in the population and the demographics of each county, participation rates are expected to increase slightly over the next ten years. The following data supports a modest change in the participation rate.

According to the California Department of Finance, the population of Riverside County is expected to increase 15% between 2015 and 2025. A 12% increase has been projected for San Bernardino County during the same time period. As noted in the table, the population is expected to increase by the same percentage between 2025 and 2035.

Population Estimates by County

County	2015	2020	2025	% Change		2030	2035	% Change 2025-2035
				2015-2025	2020-2025			
Riverside Co	2,323,572	2,227,066	2,662,235	15%		2,862,915	3,053,812	15%
San Bernardino Co	2,116,461	2,227,066	2,366,662	12%		2,515,972	2,658,556	12%
Total	4,440,033	4,454,132	5,028,897			5,378,887	5,712,368	

Population Estimates from CA Department of Finance; 2010-2060

Population estimates by age for Riverside and San Bernardino counties from 2015 through 2025 are noted in the graph. The number of “traditional” age students (15-19) in the population is expected to decrease slightly over the next ten years for both counties. The 20-24 age category is also expected to decrease with the largest decrease expected in San Bernardino County. The factor is expected to slightly reduce current participation rates.

Population Estimates by Age Category

Age	Riverside Co		% Change	San Bernardino Co		% Change
	2015	2025		2015	2025	
15-19	182,788	179,695	-1.7%	165,714	163,370	-1.4%
20-24	187,294	180,609	-3.6%	178,310	157,458	-11.7%
25-29	155,269	183,675	18.3%	159,926	166,842	4.3%
30-34	147,157	194,082	31.9%	145,102	180,930	24.7%

Population Estimates from CA Department of Finance; 2010-2060

Population estimates by ethnicity are noted in the following table from 2015 to 2025. In Riverside County, all ethnicities, with the exception of Whites, are expected to increase at double digit rates. In San Bernardino, all ethnicities except American Indian, Hawaiian, and White grow at double-digit rates. Growth is most notable among Hispanics with a total increase of more than 403,000 over the ten year period.

Population Estimates by Ethnicity

Ethnicity	Riverside Co		% Change	San Bernardino Co		% Change
	2015	2025		2015	2025	
American Indian	11,968	14,755	23.3%	9,310	9,545	2.5%
Asian	136,817	168,696	23.3%	125,929	147,214	16.9%
Black	139,880	159,391	13.9%	175,460	197,403	12.5%
Hawaiian	6,883	9,562	38.9%	6,650	7,037	5.8%
Hispanic	1,091,728	1,316,928	20.6%	1,076,162	1,254,205	16.5%
White	883,754	923,806	4.5%	675,812	689,425	2.0%
Other Races	52,497	69,097	31.6%	47,138	61,833	31.2%

Population Estimates from CA Department of Finance; 2010-2060

The impact of ethnicity changes in the population on participation rates is highly dependent on changes in the college-going rate.

In California, projections estimate that the economy will require up to 2.3 million additional college-educated workers by 2025. As the expectation of college attainment increases, it has varying impacts on students with different ethnicities. California has more than 15 million Hispanic or Latino residents, the largest number in the United States. Latinos make up 39% of the Californian population. Over 60 percent of that Latino population lives in five major counties, including Riverside and San Bernardino, as noted by The Campaign for College Opportunity (2015) in *The State of Higher Education in California—Latino Report*, Los Angeles, CA.

Three out of four (76%) Latinos graduated from high school within four years, but only three out of ten (30%) of those graduates had completed the A-G sequence needed to apply to the CSU and UC systems. Still, this is an improvement from ten years ago, when only 22% of those graduates had completed the A-G sequence.

According to Excelencia in Education (2015), *The Condition of Latinos in Education: 2015 Factbook*, Washington, D.C.: Excelencia in Education:

“Latinos had a higher college-going rate than other groups. In 2012, 70% of recent Hispanic high school graduates had enrolled in college, compared to their White (66%) and African American peers (56%)... Over the last ten years, Latinos’ college-going rate increased considerably. Between 2002 and 2012, Hispanics increased their college-going rate from 54% to 70%.”

Based on this information, population projections based on changes in ethnicity could increase participation rates over the next ten years.

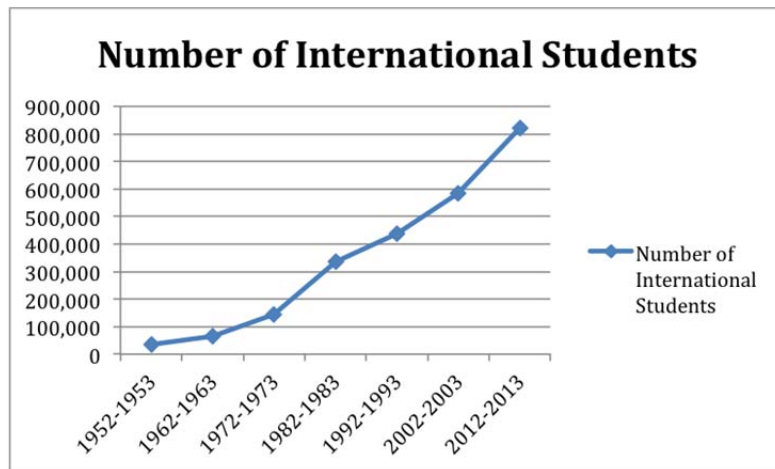
Overall, the percentage of high school graduates meeting UC/CSU application requirements has increased steadily over the last four years, as noted in the table below, indicating that a larger share of high school graduates has the ability to attend CSUSB.

Percentage of High School Graduates Meeting UC/CSU Application Requirements, By County

	2010	2011	2012	2013
Riverside	31%	33%	35%	38%
San Bernardino	30%	31%	28%	35%

Source: California Department of Education, Graduates by Race & Gender, 2010-2013

According to the Institute of International Education’s (IIE) annual survey “*2013 Open Doors Report on International Education Exchange*,” the U.S. enrolled the highest number of international students in its history during the 2012-2013 academic year, with China as the top source. For the first time, the number of international undergraduates exceeds the number of international graduate students on U.S. campuses. A total of 819,644 undergraduate and graduate students from other countries were enrolled in 2012-2013, 40% more than 10 years ago.



There are no reasons why the number of international students could not continue to increase in the U.S. and at CSUSB.

It is difficult to quantify population changes in age, ethnicity and college-going rates and how they impact future participation rates. Using 2025 county-level population data with a 0.02% increase in the participation rate for the two major counties that are feeders to

CSUSB yields a potential enrollment demand of approximately 21% or about 2% annually over the next ten years, as noted in the table below. The demand for "Other California Co" equals the average growth of Riverside and San Bernardino Counties while the demand for the "Other US/Foreign " category was based on a growing international student population and continued development of new programs that could attract students from across the U.S.

Participation Rate Analysis

County	Fall 2014	2014	2025	2025	2025 CSUSB	% Change 2105 - 2025
	Headcount Enrollment	Population Estimate	Estimated Participation Rate	Population Estimate	Enrollment Demand	
Riverside Co	5,693	2,294,333	0.27%	2,662,235	7,138	25.4%
San Bernardino Co	10,462	2,096,123	0.52%	2,366,662	12,286	17.4%
Other California Co	1,324				1,607	21.4%
Other US/Foreign	1,473				1,820	23.6%
Total	18,952	4,390,456		5,028,897	22,851	21%

Population Estimates from CA Department of Finance; 2010-2060

We also reviewed the California Post-Secondary Education Commission (CPEC) March 2010 report titled *California State University Undergraduate Demand Projections, 2009-2019*. Our participation rate analysis is very close to the report estimates, especially with regard to ethnicity rates. We are at 21% growth in our analysis vs. 16% growth in their analysis. If we do not escalate the participation rate in 2025, our analysis would match the report findings exactly. The report is somewhat dated with projections through 2019 (we are using 2025), but the report supports our overall analysis.

In summary, future increases in population for Riverside and San Bernardino counties combined with increasing college-going rates for recent high school graduates and Latinos will continue to fuel the demand for higher education. Given the socioeconomic status of the region, potential students will look to nearby colleges and universities for their educational needs. CSUSB is well suited to absorb the anticipated student demand for higher education over the next 10 to 15 years.

CALIFORNIA STATE UNIVERSITY, SAN BERNARDINO

UTILIZATION AND SPACE NEEDS ANALYSIS

February 24, 2016

The space needs analysis which is part of the master planning process included the consultant team meeting with campus leadership, faculty, and staff. Facilities, staffing, and course information was provided by the California State University San Bernardino (CSUSB). The consultant conducted analyses to study the utilization of instructional spaces and quantify the need for all major categories of space.

The consultant utilized space planning metrics adopted by the California State University system wherever possible. In some categories, the consultant has used an alternate method which is explained. The *Standards for Campus Development Programs, Section VI* of the *State University Administrative Manuals*, is the item utilized. This includes Sections 9060 through 9079. In a few instances, CSU administrators participating in this master planning project suggested to the planning team that systemwide averages from a 1990s capacity study might be a better metric than the Section VI of SUAM. Where those were utilized, it is also noted in this analysis.

The table below summarizes these findings. The sections following the table describe the space guidelines used for each of these major space categories.

Space Category	Existing ASF	Base Year <i>Student FTE = 14,243</i> <i>Staffing FTE = 2,457</i>			Target Year <i>Student FTE = 23,325</i> <i>Staffing FTE = 3,469</i>		
		Guideline ASF	Surplus/ (Deficit)	Percent	Guideline ASF	Surplus/ (Deficit)	Percent
				Surplus/ (Deficit)			Surplus/ (Deficit)
Academic Space							
Classroom & Service	88,537	80,452	8,085	9%	130,754	(42,217)	(48%)
Teaching Laboratories & Service	143,769	116,372	27,397	19%	187,799	(44,030)	(31%)
Instructional Activity	116,309	157,676	(41,367)	(36%)	256,577	(140,268)	(121%)
Research Laboratories & Service	48,661	56,410	(7,749)	(16%)	92,380	(43,719)	(90%)
Offices & Service	321,350	267,114	54,236	17%	380,309	(58,959)	(18%)
Library	138,933	191,285	(52,352)	(38%)	284,779	(145,846)	(105%)
Physical Education	78,289	115,369	(37,080)	(47%)	153,945	(75,656)	(97%)
Assembly & Exhibit	28,190	82,908	(54,718)	(194%)	137,402	(109,212)	(387%)
Student Center	96,342	128,187	(31,845)	(33%)	209,926	(113,584)	(118%)
Student Recreation	25,691	21,365	4,326	17%	34,988	(9,297)	(36%)
Plant Operations	38,158	42,729	(4,571)	(12%)	46,649	(8,491)	(22%)
CAMPUS TOTAL	1,124,229	1,259,867	(135,638)	(12%)	1,915,508	(791,279)	(70%)

ASF = Assignable Square Feet

CLASSROOMS & SERVICE NEEDS

Classrooms are defined as any room primarily used for scheduled instruction requiring no special equipment and referred to as a "general purpose" classroom, seminar room, or lecture hall. Classroom service space directly supports one or more classrooms as an extension of the classroom activities, providing media space, preparation areas, or storage.

Classroom space requirements are determined by a formula that takes the target utilization of 53 hours per week, multiplies it by the target student station occupancy of 66% and divides the result into the 15 square feet per student station. This calculation produces a guideline of 0.43 ASF per weekly student contact hour (WSCH) for lecture courses. That factor produced the classroom space needs findings.

Based on this formula CSUSB shows slight surplus of 9% or 8,085 ASF in the Base Year and a need of 42,217 ASF in the Target Year.

CLASSROOM UTILIZATION

During Fall 2014, the 109 classrooms analyzed on the campus of California State University San Bernardino averaged 38 hours of scheduled use per week at 75% student station occupancy. Weekly room hours are defined as the number of hours a week a room is scheduled. Student station occupancy is defined as the percentage of seats filled when a room is occupied for scheduled use. The ASF per station is the average quantity of space per student station. At CSUSB, this is 16 ASF per station.

The 38 average weekly room hours of use at CSUSB is below the California State University's standard of 53 average weekly room hours of use. The 53 hour target is one of the highest in use across the United States. The average student station occupancy of 75% is above the 66% average student station occupancy standard that the California State University has in place. The CSU System utilizes an expectation of 35 weekly station hours, which is based on an average seat fill of 66% for 53 room hours of use. The table below does calculations that show the current utilization is 88% of weekly station hour expectation.

Building Name and ID	No. of Rooms	Average Room Size	Average ASF per Station	Average Section Size	Weekly Station Hours	CSUSB Standard WSH	Average Weekly Room Hours	Hours in Use Student Station Occupancy %	Utilization as a Percent of the Standard	
Biological Sciences	BI	1	421	15	23	26.7	35	33	81%	76%
Chaparral Hall	CH	2	1,042	15	54	15.6	35	19	81%	45%
Chemical Sciences	CS	5	1,077	14	57	31.5	35	37	73%	90%
College of Education	CE	12	818	16	42	30.7	35	38	73%	88%
Health & Physical Education Complex	HP	4	1,067	18	37	26.0	35	40	60%	74%
Jack H. Brown Hall	JB	21	730	15	39	32.6	35	40	80%	93%
John M. Pfau Library	PL	14	627	18	27	23.8	35	30	74%	68%
Physical Education	PE	1	793	20	33	29.6	35	36	83%	85%
Physical Sciences	PS	6	1,061	14	71	37.3	35	35	74%	107%
Social & Behavioral Sciences	SB	11	728	16	39	39.7	35	43	78%	113%
Temporary Modular Classrooms 212	TC	5	774	16	39	25.1	35	30	80%	72%
University Hall	UH	25	599	14	31	29.1	35	42	73%	83%
Visual Arts Center	VA	2	1,292	16	74	31.8	35	24	86%	91%
Total No. of Rooms = 109	Average	759	16	39	30.9	35	38	75%	88%	

WSH = Weekly Station Hours

53 room hours @ 66% student stations occupied equals the CSU standard of 35 weekly station hours

Classrooms are located in thirteen different buildings with 76% of the classrooms being in five of these buildings. University Hall houses the most classrooms with 25, almost a quarter of the campus total, and averaged 42 weekly room hours, second only to the Social & Behavioral Sciences' 43 average weekly room hours for all 11 of its classrooms. Jack H. Brown Hall achieved an average of 40 hours per week for its 21 classrooms. The two classrooms in Chaparral Hall averaged only 19 weekly room hours, the lowest building average.

Twelve of the thirteen buildings achieved a student station occupancy well above the 66% California State University standard. The classrooms in the Visual Arts Center had the highest average student station occupancy percentage at 86%. The classrooms in the Health & Physical Education Complex had the lowest student station occupancy at 60%. This is stronger classroom seat fill than the consultant usually finds in these studies.

Analysis was done on classroom use by time of day. Tuesday/Thursday use is a bit stronger than Monday/Wednesday/Friday use. In all days utilization is strongest from approximately 9:00am until 3:00pm, with relatively strong evening use.

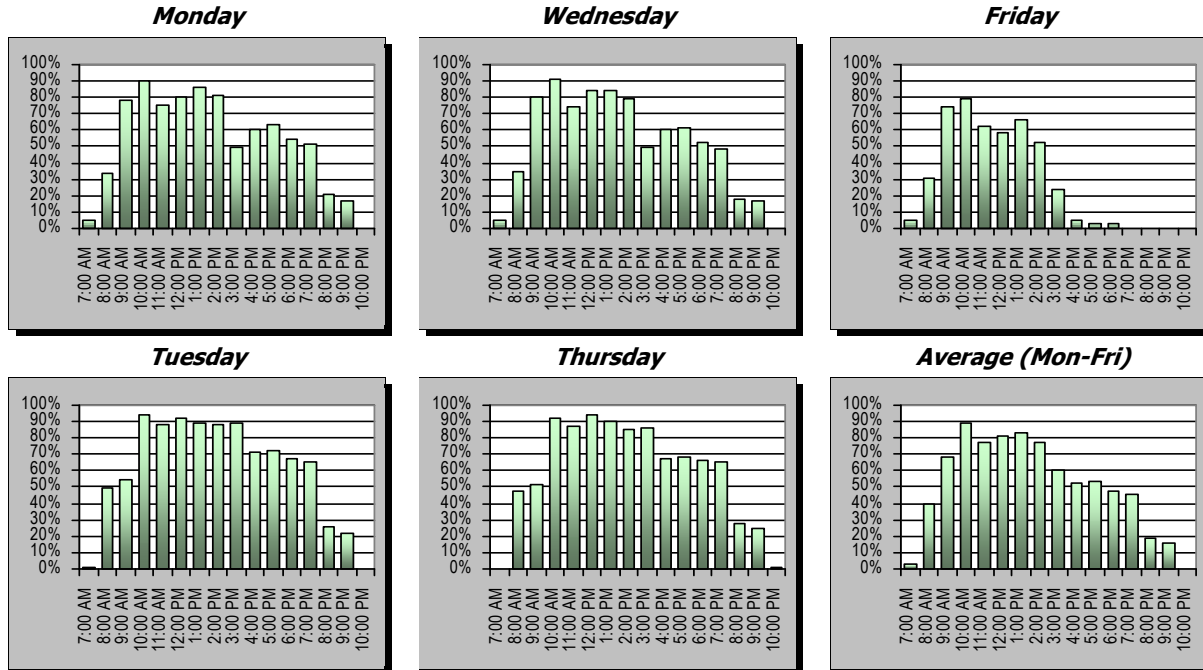
Scheduled Classroom Use by Day and Time (Fall 2014)

(Darker colors indicate a large percentage of rooms are scheduled.)

Time of Day	Monday		Tuesday		Wednesday		Thursday		Friday		Average	
	Rooms in Use	% In Use	Rooms in Use	% In Use	Rooms in Use	% In Use	Rooms in Use	% In Use	Rooms in Use	% In Use	Rooms in Use	% In Use
7:00 AM	5	5%	1	1%	5	5%	0	0%	5	5%	3	3%
8:00 AM	37	34%	55	50%	38	35%	52	48%	34	31%	43	40%
9:00 AM	85	78%	59	54%	87	80%	56	51%	81	74%	74	68%
10:00 AM	98	90%	102	94%	99	91%	100	92%	86	79%	97	89%
11:00 AM	82	75%	96	88%	81	74%	95	87%	68	62%	84	77%
12:00 PM	87	80%	100	92%	92	84%	102	94%	63	58%	89	81%
1:00 PM	94	86%	97	89%	92	84%	98	90%	72	66%	91	83%
2:00 PM	88	81%	96	88%	86	79%	93	85%	57	52%	84	77%
3:00 PM	55	50%	97	89%	54	50%	94	86%	26	24%	65	60%
4:00 PM	65	60%	77	71%	65	60%	73	67%	5	5%	57	52%
5:00 PM	69	63%	78	72%	67	61%	74	68%	3	3%	58	53%
6:00 PM	59	54%	73	67%	57	52%	72	66%	3	3%	53	48%
7:00 PM	56	51%	71	65%	53	49%	71	65%	0	0%	50	46%
8:00 PM	23	21%	28	26%	20	18%	30	28%	0	0%	20	19%
9:00 PM	19	17%	24	22%	19	17%	27	25%	0	0%	18	16%
10:00 PM	0	0%	0	0%	0	0%	1	1%	0	0%	0	0%

Total classrooms = 109

Percent of Classrooms In Use

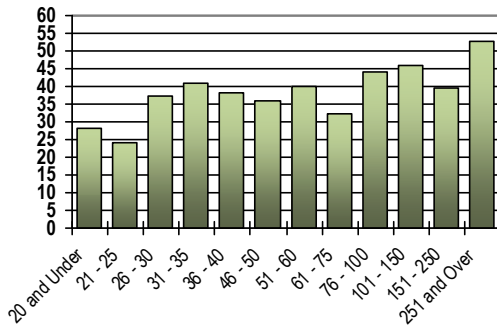


The need for rooms appears much more significant regarding larger rooms. The rooms with more than 75 seats were used well over 40 hours per week, with the largest room achieving 53 hours. This is consistent with comments made to the consultants by academic administrators and faculty that the need for capacity is strongest in larger rooms.

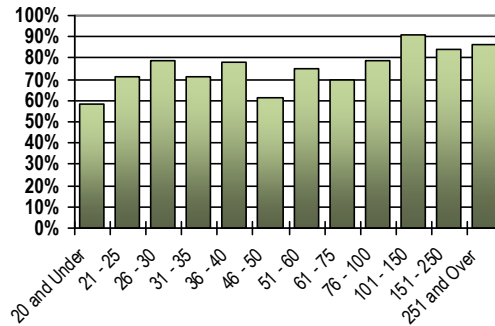
Classroom Utilization Analysis by Capacity Summary

Classroom Capacity Grouping	No. of Rooms	No. of Seats	Average Room Size	Average ASF per Station	Average Section Size	Weekly Station Hours	CSUSB Standard WSH	Average Weekly Room Hours	Hours in Use Student Station Occupancy %	Utilization as a Percent of the Standard
20 and Under	7	140	332	17	14	16.5	35	28	58%	47%
21 -25	3	71	400	17	16	17.2	35	24	71%	49%
26 - 30	39	1,113	447	16	23	29.4	35	37	79%	84%
31 - 35	5	166	537	16	23	28.8	35	41	71%	82%
36 - 40	7	280	718	18	31	29.7	35	38	78%	85%
41 - 50	10	494	705	14	30	22.0	35	36	61%	63%
51 - 60	24	1,399	904	15	44	30.4	35	40	75%	87%
61 - 75	4	291	1,062	15	48	22.8	35	32	70%	65%
76 - 100	2	176	1,263	14	70	35.0	35	44	79%	100%
101 - 150	4	550	2,139	16	123	42.0	35	46	91%	120%
151 - 250	3	612	2,460	12	164	33.5	35	40	84%	96%
251 and Over	1	293	2,596	9	250	45.1	35	53	86%	129%
<i>Total No. of Rooms = 109</i>	Average		759	16	39	30.9	35	38	75%	88%

Weekly Room Hours by Capacity:



Student Station Occupancy by Capacity:



TEACHING LABORATORIES & SERVICE NEEDS

Teaching laboratories are defined as rooms used primarily by regularly scheduled classes that require special purpose equipment to serve the needs of particular disciplines for group instruction, participation, observation, experimentation, or practice. Station sizes in teaching laboratories vary by discipline. Space requirements are calculated with a formula that is similar to those used to determine classroom space requirements, except that the ASF per student station and weekly room hour expectation varies by discipline.

The analysis shows a 19% surplus of 27,397 ASF of teaching lab space in the Base Year while the Target Year shows a 31% deficit equating to 44,030 ASF.

TEACHING LABORATORY UTILIZATION

The scheduled weekly room hour average for teaching laboratories is generally found to be less than the scheduled use of classrooms due to the need for preparation time of specialized equipment prior to class and after class. Conversely, the student station occupancy is normally higher as the number enrolled in a laboratory exercise is more closely monitored, safety being a key issue as well as the limitations of faculty observation.

Utilization goals for CSUSB’s lower division labs is 27.5 weekly room hours at 85% student station occupancy and 22 weekly room hours at 80% student station occupancy for the upper division labs.

The teaching laboratory space per student station guideline is based on 19 different subject areas, which for CSUSB's analysis ranges from 30 to 111 ASF. The space guidelines for teaching laboratories consider the types and amounts of space required given the unique activities of the discipline.

As an example, the guideline of 60 ASF per station for Biological Sciences supports a contemporary science laboratory model. Science facilities being constructed have a higher ASF per station than those of fifty years ago. Previously, science laboratories were configured to be static environments with island benches. The laboratory now must support the flexibility required by collaborative learning models. The allocation of 60 ASF per station provides space in a Biology laboratory for the student work station, equipment areas around the room, casework for storage, and the instructional area or areas with screens or LCD displays, room controls, and teaching laboratory support.

Teaching laboratories are not limited to science laboratories but also include other instructional spaces such as art studios.

As with classroom utilization analysis, the square feet per station, the hours of use per week, and the percentage of student stations filled when laboratory sections are in session combine to form the overall teaching laboratory utilization factors.

In Fall 2014, there were 98 rooms classified as teaching laboratories. The teaching laboratories for California State University San Bernardino averaged 18 hours per week of scheduled use. Current California State University standards are 27.5 weekly room hours per week for lower division teaching laboratories and 22 weekly room hours for upper division teaching laboratories. This is one of the highest expectation targets in U. S. higher education.

Twelve buildings contain teaching laboratories. Of these, 67% of the teaching laboratories are in five of the buildings. The College of Education has the most teaching laboratories with 16 labs averaging 17 weekly room hours. The two teaching laboratories in Chaparral Hall had the highest average weekly room hours at 25 WRH. Biological Sciences with 12 labs averaging 28 hours per week, and Jack H. Brown Hall with 11 labs averaging 23 hours per week, are the buildings with large numbers of laboratories achieving the best use. The two teaching laboratories in University Hall averaged only 10 weekly room hours.

Teaching Laboratory Utilization Analysis by Building Summary

Building Name and Id	No. of Rooms	Average Room Size	Average ASF per Station	Average Section Size	Weekly Seat Hours	Average Weekly Room Hours	Hours in Use Student Station Occupancy %	
Biological Sciences	<i>BI</i>	12	969	49	18	26.0	24	105%
Chaparral Hall	<i>CH</i>	2	1,591	66	25	26.6	25	105%
Chemical Sciences	<i>CS</i>	8	1,187	61	21	23.0	20	120%
College Of Education	<i>CE</i>	16	842	33	18	11.8	17	69%
Health & Physical Education Addition (Nursing Skills Lab)	<i>NS</i>	1	1,922	160	30	20.3	12	173%
Health & Physical Education Complex	<i>HP</i>	4	1,801	132	20	27.1	24	116%
Jack H. Brown Hall	<i>JB</i>	11	1,124	47	27	30.5	23	125%
Performing Arts	<i>PA</i>	6	596	33	15	10.3	13	74%
Physical Sciences	<i>PS</i>	9	989	50	15	13.7	13	99%
Social & Behavioral Sciences	<i>SB</i>	12	947	53	16	16.6	15	96%
University Hall	<i>UH</i>	2	980	54	19	11.3	10	118%
Visual Arts Center	<i>VA</i>	15	1,495	83	20	19.4	19	105%
<i>Total No. of Rooms = 98</i>	AVERAGE	1,097	57	19	19.3	18	102%	

A total of 45, almost half, of the teaching laboratories showed a student station occupancy of 100% or higher. The consultant believes that CSUSB should field verify the station counts for all teaching laboratories as the 102% average student station occupancy is not a number that is typically seen. The guideline for California State University lower division teaching laboratories is 85% and the upper division teaching laboratory guideline is 80%.

There are two types of laboratories that were not included in the teaching laboratory analysis: open laboratories and research laboratories. Open laboratories are rooms that are open for student use but are informally scheduled or unscheduled. They are part of the Instructional Activity space category. Research laboratories are rooms used for laboratory experimentation or training in research methods. The research conducted may be by either faculty or students for both funded and non-funded research. Open and research laboratory spaces do not have formal or scheduled utilization expectations, therefore their utilization was not analyzed.

INSTRUCTIONAL ACTIVITY SPACE

Instructional activity space includes rooms that are open for student use and that are not used on a regularly scheduled basis. These rooms may provide equipment to serve the needs of particular disciplines for group instruction in informally or irregularly scheduled classes. Alternatively, these rooms are used for individual student experimentation, observation, or practice in a particular field of study.

Types of rooms included in this category include computer laboratories, language laboratories, independent art studios, music practice rooms, and tutorial and testing facilities.

Instructional activity space also includes other space assigned to a department that has not been included in the classroom, laboratory, or office space classifications. These consist of a variety of spaces including: study rooms; food facilities; meeting rooms; locker rooms (non-athletic); media production; clinic space; demonstration rooms; animal quarters; learning center space; lounges; and central technology spaces. Due to the diversity of these spaces and the different ways various campuses might classify these spaces, the guideline is based on the types and amounts of space typical for an institution of the given enrollment.

California State University has no guideline for this category. The consultant used the average in the 1998 CSU capacity study which was 11 ASF per projected master plan FTE and applied it to instructional activity space for all campus units which had such space. Using this guideline generates a need in the base year of 41,367 ASF and the need increases to 140,268 ASF in the target year.

RESEARCH LABORATORIES & SERVICE

Research laboratories are rooms used for unscheduled laboratory experimentation or training in research methods and observation. The research may be conducted by either faculty or students for both funded and non-funded research. This room type does not have utilization expectations.

California State University guidelines for Research Laboratories are based on graduate student FTE, by discipline, not based on sponsored research.

Using this guideline formula, a need for 7,749 ASF exists today and will grow to a need of 43,719 ASF in the Target Year.

An alternative method would be to take the graduate FTE and multiply it by 12 then divide by 8. Using this method would generate a need of 35,954 in the Base Year which grows to a need of 89,909 in the Target Year.

OFFICES & SERVICE

The guideline application for office space needs is based upon employee types and the additional application of space amounts for office service and conference space needs. Office space includes private offices and workstations. Office service space includes work rooms (i.e., printer areas, copy machines, office supplies) and office storage (i.e., file rooms).

The space guideline accounts for but provides zero space for positions such as custodial staff that do not require office space. Conference room and office support areas such as printer/copier work rooms are generated based on the number and type of staff at the College.

The following table shows the guidelines for each employee type as generated from the staffing file received from CSUSB by academic or administrative unit.

Staffing Type	Office Guideline ASF per FTE	BASE YEAR			TARGET YEAR			Existing ASF
		FTE	Head- count	Total Guideline ASF	FTE	Head- count	Total Guideline ASF	
Academic								
Dean	200	6.00	6	1,200	6.00	6	1,200	
Associate Vice President	180	1.00	1	180	1.00	1	180	
Assoc Dean	180	4.00	4	720	4.00	4	720	
Director	150	11.50	12	1,725	11.50	12	1,725	
Chair	180	15.50	20	2,790	15.50	20	2,790	
Assoc Director	110	1.00	1	110	1.00	1	110	
Asst Director	110	3.50	4	385	3.50	4	385	
Faculty (25)	110	255.00	352	28,050	417.59	576	45,935	
Faculty (30)	110	56.00	71	6,160	91.71	116	10,088	
Faculty (33)	110	90.50	125	9,955	148.20	205	16,302	
Faculty (35)	110	59.00	71	6,490	96.62	116	10,628	
Faculty (40)	110	14.50	15	1,595	23.75	25	2,612	
Faculty (50)	110	279.00	316	30,690	456.89	517	50,258	
Visiting Professor	110	1.00	1	110	1.00	1	110	
Postdoctoral	110	1.00	1	110	1.64	2	180	
Professional	110	174.50	176	19,195	230.13	232	25,314	
Administrative Support *	120	33.00	38	3,960	43.52	50	5,222	
Teaching Assoc/Asst	60	27.00	54	1,620	44.22	88	2,653	
Graduate Assistant	60	29.50	59	1,770	48.31	97	2,899	
Student Worker	60	241.00	482	14,460	317.83	636	19,070	
Support Staff (No Office Needed)	0	1.50	2	0	1.98	3	0	
Crafts & Trades	0	1.00	1	0	1.32	1	0	
Temporary Employee	0	1.00	2	0	1.64	3	0	
Academic Office Space				131,275			198,381	145,568
<i>Total Service Space</i>				23,382			36,876	20,135
<i>Total Conference Room Space</i>				12,070			17,909	12,095
Academic SubTotal		1,307.00	1,814	166,727	1,968.83	2,717	253,165	177,798
Surplus/(Deficit)				11,072			(75,367)	

* - Mix of secretary / receptionists at 160 and clerical or tech support at 80

Staffing Type	Office Guideline ASF per FTE	BASE YEAR			TARGET YEAR			Existing ASF
		FTE	Head- count	Total Guideline ASF	FTE	Head- count	Total Guideline ASF	
Administrative								
President	300	1.00	1	300	1.00	1	300	
Vice President	200	4.00	4	800	4.00	4	800	
Associate Vice President	180	6.00	6	1,080	6.00	6	1,080	
Assistant Vice President	180	4.00	4	720	4.00	4	720	
Provost	200	1.00	1	200	1.00	1	200	
Assoc Provost	180	3.00	3	540	3.00	3	540	
Director	150	42.00	42	6,300	42.00	42	6,300	
Assoc Director	110	4.00	4	440	4.00	4	440	
Asst Director	110	11.00	11	1,210	11.00	11	1,210	
Professional	110	400.00	416	44,000	527.52	549	58,027	
Technical	80	1.50	2	120	1.98	3	158	
Administrative Support *	120	87.50	92	10,500	115.40	121	13,847	
Teaching Assoc/Asst	60	1.00	1	60	1.64	2	98	
Student Worker	60	307.50	615	18,450	405.53	811	24,332	
Police Officer	30	19.50	22	585	25.72	29	771	
Switchboard Operator	30	10.50	14	315	13.85	18	415	
Student Worker (No Office Needed)	0	70.50	141	0	92.98	186	0	
Library Personnel (See Library GdIns)	0	47.00	61	0	76.97	100	0	
Crafts & Trades	0	116.50	118	0	153.64	156	0	
Temporary Employee	0	12.00	24	0	19.65	39	0	
Administrative Office Space				85,620			109,240	118,877
<i>Total Service Space</i>				6,680			8,248	13,927
<i>Total Conference Room Space</i>				8,088			9,655	10,748
Administrative SubTotal		1,149.50	1,582	100,388	1,510.86	2,090	127,144	143,552
Surplus/(Deficit)				43,165			16,408	
Campus Office Space				216,895			307,621	264,445
<i>Total Service Space</i>				30,062			45,124	34,062
<i>Total Conference Room Space</i>				20,158			27,564	22,843
Campus Total		2,456.50	3,396	267,114	3,479.69	4,806	380,309	321,350
Surplus/(Deficit)				54,236			(58,959)	

* - Mix of secretary / receptionists at 160 and clerical or tech support at 80

As the table shows, a surplus of 54,236 ASF exists in the base year and a deficit of 58,959 ASF exists in the Target Year.

It should be noted that facilities inventory provided to the consultant contained almost 35,000 ASF of office service space that the consultant felt should be coded as service space to other functions, i.e. audio visual, instructional activity, library, student center, plant operations, and residence life. The consultant therefore, moved that ASF to the appropriate space category.

Similarly, the consultant moved approximately 12,000 ASF of conference room space that should be coded as meeting rooms, study rooms, or food facilities to the student center category.

LIBRARY

Spaces such as stack areas, study space, staff offices, and processing or technical areas are considered library.

The necessity of the library space in today’s educational settings is sometimes questioned during spatial studies. As consultants, we often hear that on-line resources can be accessed from anywhere, negating the need for bricks and mortar. The concern in such thinking is that while students and faculty are increasing their use of electronic media, there is an even greater need for support of the academic community through space in which to gather and the continuation of librarians as the purveyors and facilitators of information. The contemporary library is best defined as a blend of the traditions of the past – structure and service – integrated with digital media.

The California State University guidelines for library space use different factors for collections, reader stations, storage, non-book, and staff based of FTE. The following tables show how the guidelines were applied and the results of each type of space within a library.

CSUSB Library Guideline		
	BY FTE	TY FTE
	14,243	23,325
	ASF	ASF
Volumes in open stacks	56,000	80,000
Movable Aisle Compact Storage (MACS)	17,429	20,000
Non book (40% of Open Stack)	22,400	32,000
Reader Stations 20% of FTE (see table 2)	75,431	123,529
Staff (89 @ 14,243*) & (130 @ 23,325*) x 225 ASF	20,025	29,250
Total	191,285	284,779

* = FTE level

Reader Stations 20% of FTE											
		General Purpose 88% of total			Study Carrels 10% of total			Telecom/Computer 2% of total			Total ASF
FTE	Total Stns	# stns	ASF per	ASF	# stns	ASF per	ASF	# stns	ASF per	ASF	
14,243	2,849	2,507	25	62,669	285	35	9,970	57	49	2,792	75,431
23,325	4,665	4,105	25	102,630	467	35	16,328	93	49	4,572	123,529

The outcome from the analysis of the library guidelines produces a 38% deficit of 52,352 ASF in the base year and a 105% deficit of 145,846 ASF in the target year.

PHYSICAL EDUCATION

This category includes spaces for physical education and related support areas. The California State University guideline is 8.1 ASF/FTE for campuses with FTE between 10,000-15,000 and 6.6 ASF/FTE for campuses with target FTE between 20,000 and 25,000. Using these guidelines produces a deficit in the base year of 37,080 ASF and a deficit of 75,656 ASF in the target year.

ASSEMBLY & EXHIBIT

Assembly space is defined as any room with an academic focus designed and equipped for the assembly of large numbers of people. This includes theaters, auditoriums, concert halls, and arenas. Exhibit spaces are used for exhibition of materials, works of art, or artifacts intended for general use primarily in support of academic endeavors although such space may be used for events open to the community outside the campus.

The California State University provides some ASF guideline information in this category for galleries and museums, but only provides station counts for theaters, rehearsal halls, and recital halls. Because of this the consultant used the Council of Educational Facility Planners International (CEFPI) guideline which provides a core allowance of 22,450 ASF for institutions with a minimum of 5,000 student FTE and an active fine arts program. It then allows for an additional six ASF per student FTE over the 5,000 FTE minimum. This guideline also adds 5,000 ASF for institutions with an active music program.

This Assembly & Exhibit guideline generates a need for 54,718 ASF in the Base Year and need of 109,212 ASF in the Target Year.

STUDENT CENTER

Student centers are comprised of various types of space. The primary purpose of these spaces is to support student activities. Examples of the various functions that are typically found in a comprehensive student center include: food service, bookstore, lounge, recreation space like video game rooms, billiards, etc., meeting space, and student government/club space.

California State University has no guideline for Student Centers. A guideline of 9 ASF per FTE, which is a guideline widely used but at the low end of the range of guidelines for student centers still shows a need of 31,845 ASF for the Base Year and a need of 113,584 ASF in the Target Year.

STUDENT RECREATION

California State University has no guideline for this category. The consultant has used a CEFPI (2006 edition) guideline of 1.5 ASF per student for student recreation. Using this guideline shows a surplus of 4,326 ASF in the Base Year and deficit of 9,297 ASF in the Target Year. The consultant notes that CEFPI did not envision the full range of facilities often found in student recreation centers.

PLANT OPERATIONS

Plant operations space typically includes room use codes for shops, central storage, and central services, but can also include other space types assigned to physical plant.

The CSU Corporation Yard guidelines were utilized. The consultant has chosen to use the more familiar term "plant operations" to describe this category of space.

APPENDIX A – CLASSROOM UTILIZATION ANALYSIS BY BUILDING

Classroom Utilization Analysis by Building

Room Id	Room Use Code	Assignable Sq. Ft.	No. of Stations	Assignable Sq. Ft. Per Station	Average Enrollment	Weekly Student Contact Hours	Weekly Seat Hours	Weekly Room Hours	Hours in Use Student Station Occupancy %
Biological Sciences									No. of Rooms = 1
BI0009	110	421	28	15	23	747	26.7	33	81%
	<i>Average</i>	421	28	15	23		26.7	33	81%
	<i>Total</i>	421	28			747		33	
Chaparral Hall									No. of Rooms = 2
CH0116	110	959	60	16	56	960	16.0	18	91%
CH0135	110	1,125	75	15	53	1,151	15.3	21	72%
	<i>Average</i>	1,042	68	15	54		15.6	19	81%
	<i>Total</i>	2,084	135			2,111		39	
Chemical Sciences									No. of Rooms = 5
CS0122	110	998	72	14	39	1,084	15.1	26	59%
CS0128	110	998	72	14	38	1,447	20.1	34	59%
CS0130	110	1,299	96	14	80	3,427	35.7	43	83%
CS0142	110	1,572	125	13	112	6,044	48.4	53	92%
CS0222	110	519	35	15	19	585	16.7	32	53%
	<i>Average</i>	1,077	80	14	57		31.5	37	73%
	<i>Total</i>	5,386	400			12,586		187	
College Of Education									No. of Rooms = 12
CE0104	110	547	30	18	23	892	29.7	38	78%
CE0105	110	2,345	228	10	186	8,543	37.5	42	90%
CE0106	110	660	40	17	27	1,225	30.6	45	68%
CE0107	110	438	30	15	18	583	19.4	32	62%
CE0108	110	427	30	14	22	636	21.2	28	76%
CE0109	110	428	24	18	18	814	33.9	44	78%
CE0110	110	865	60	14	42	1,946	32.4	45	72%
CE0113	110	737	48	15	25	1,019	21.2	39	54%
CE0115	110	468	30	16	24	932	31.1	38	81%
CE0116	110	872	60	15	34	1,707	28.5	47	61%
CE0117	110	766	32	24	22	737	23.0	33	69%
CE0241	110	1,268	60	21	60	1,598	26.6	27	100%
	<i>Average</i>	818	56	16	42		30.7	38	73%
	<i>Total</i>	9,821	672			20,631		457	
Health & Physical Education Complex									No. of Rooms = 4
HP0122	110	312	20	16	11	357	17.8	38	46%
HP0124	110	2,917	125	23	102	3,341	26.7	33	81%
HP0125	110	741	40	19	28	1,268	31.7	43	75%
HP0126	110	299	20	15	9	372	18.6	45	41%
	<i>Average</i>	1,067	51	18	37		26.0	40	60%
	<i>Total</i>	4,269	205			5,337		159	

Classroom Utilization Analysis by Building

Room Id	Room Use Code	Assignable Sq. Ft.	No. of Stations	Assignable Sq. Ft. Per Station	Average Enrollment	Weekly Student Contact Hours	Weekly Seat Hours	Weekly Room Hours	Hours in Use Student Station Occupancy %
Jack H. Brown Hall									
									No. of Rooms = 21
JB0102	110	2,927	206	14	177	6,593	32.0	36	89%
JB0109	110	866	60	14	61	2,664	44.4	44	101%
JB0111	110	945	60	16	58	2,568	42.8	44	97%
JB0112	110	473	28	17	21	999	35.7	52	69%
JB0113	110	1,046	60	17	48	1,792	29.9	38	79%
JB0114	110	428	28	15	23	1,020	36.4	44	83%
JB0116	110	428	28	15	27	1,273	45.5	48	96%
JB0118	110	428	28	15	21	722	25.8	34	75%
JB0137	110	454	28	16	22	1,122	40.1	51	79%
JB0138	110	545	56	10	27	1,315	23.5	49	48%
JB0139	110	518	28	19	25	760	27.1	31	88%
JB0140	110	989	60	16	42	2,335	38.9	57	69%
JB0144	110	489	30	16	28	932	31.1	34	91%
JB0146	110	494	30	16	26	952	31.7	37	86%
JB0254	110	852	56	15	36	1,365	24.4	38	64%
JB0258	110	859	60	14	48	2,229	37.2	47	79%
JB0262	110	840	60	14	40	1,954	32.6	49	66%
JB0383	110	433	30	14	25	970	32.3	38	86%
JB0385	110	433	30	14	23	726	24.2	31	78%
JB0386	110	460	28	16	21	154	5.5	6	92%
JB0387	110	433	30	14	26	897	29.9	35	87%
<i>Average</i>		730	49	15	39		32.6	40	80%
<i>Total</i>		15,340	1,024			33,341		840	
John M. Pfau Library									
									No. of Rooms = 14
PL0211	110	815	56	15	35	1,309	23.4	37	64%
PL0212	110	362	20	18	19	344	17.2	18	96%
PL0214	110	355	20	18	20	484	24.2	25	98%
PL0217	110	767	49	16	31	1,411	28.8	45	65%
PL0224	110	753	52	14	35	1,151	22.1	32	69%
PL0245	110	756	27	28	34	634	23.5	19	125%
PL0256	110	352	20	18	10	118	5.9	12	50%
PL0263	110	831	40	21	36	959	24.0	25	97%
PL0266	110	679	40	17	23	787	19.7	34	58%
PL0269	110	774	40	19	35	1,204	30.1	34	90%
PL0277	110	364	20	18	21	262	13.1	15	90%
PL0283	110	760	49	16	34	1,036	21.1	30	70%
PL0287	110	282	20	14	8	371	18.5	45	41%
PL0293	110	934	60	16	44	2,165	36.1	49	74%
<i>Average</i>		627	37	18	27		23.8	30	74%
<i>Total</i>		8,784	513			12,233		417	
Physical Education									
									No. of Rooms = 1
PE0129	110	793	40	20	33	1,182	29.6	36	83%

Classroom Utilization Analysis by Building

Room Id	Room Use Code	Assignable Sq. Ft.	No. of Stations	Assignable Sq. Ft. Per Station	Average Enrollment	Weekly Student Contact Hours	Weekly Seat Hours	Weekly Room Hours	Hours in Use Student Station Occupancy %
<i>Average</i>		793	40	20	33		29.6	36	83%
<i>Total</i>		793	40			1,182		36	

Physical Sciences									<i>No. of Rooms = 6</i>
PS0010	110	2,596	293	9	250	13,221	45.1	53	86%
PS0133	110	394	26	15	19	184	7.1	11	64%
PS0203	110	659	48	14	26	887	18.5	34	54%
PS0204	110	1,226	80	15	60	2,727	34.1	45	75%
PS0209	110	361	23	16	14	272	11.8	20	58%
PS0223	110	1,127	72	16	60	2,939	40.8	49	83%
<i>Average</i>		1,061	90	14	71		37.3	35	74%
<i>Total</i>		6,363	542			20,229		212	

Social & Behavioral Sciences									<i>No. of Rooms = 11</i>
SB0127	110	1,069	60	18	41	2,196	36.6	53	69%
SB0128	110	1,891	150	13	146	8,322	55.5	57	97%
SB0129	110	1,069	60	18	51	2,017	33.6	39	86%
SB0205	110	402	28	14	18	654	23.4	36	66%
SB0210	110	448	28	16	22	835	29.8	38	78%
SB0211	110	445	28	16	23	905	32.3	40	82%
SB0212	110	444	28	16	22	695	24.8	32	77%
SB0213	110	904	60	15	54	3,030	50.5	57	89%
SB0214	110	444	28	16	18	763	27.2	41	66%
SB0216	110	448	28	16	22	654	23.4	31	77%
SB0217	110	445	28	16	17	815	29.1	47	62%
<i>Average</i>		728	48	16	39		39.7	43	78%
<i>Total</i>		8,009	526			20,886		470	

Temporary Modular Classrooms 212									<i>No. of Rooms = 5</i>
TC0013	110	478	30	16	27	572	19.1	22	89%
TC0014	110	478	30	16	20	639	21.3	32	68%
TC0015	110	974	60	16	46	1,507	25.1	33	75%
TC0016	110	974	60	16	46	1,449	24.2	32	77%
TC0017	110	966	60	16	58	1,856	30.9	32	97%
<i>Average</i>		774	48	16	39		25.1	30	80%
<i>Total</i>		3,870	240			6,023		150	

University Hall									<i>No. of Rooms = 25</i>
UH0042	110	776	53	15	40	1,351	25.5	34	75%
UH0057	110	410	28	15	26	1,395	49.8	53	94%
UH0058	110	416	28	15	24	1,268	45.3	53	85%
UH0059	110	416	28	15	22	1,060	37.9	49	77%
UH0060	110	416	28	15	24	919	32.8	38	86%
UH0061	110	416	28	15	19	995	35.5	53	67%
UH0062	110	450	32	14	22	1,186	37.1	53	70%

Classroom Utilization Analysis by Building

Room Id	Room Use Code	Assignable Sq. Ft.	No. of Stations	Assignable Sq. Ft. Per Station	Average Enrollment	Weekly Student Contact Hours	Weekly Seat Hours	Weekly Room Hours	Hours in Use Student Station Occupancy %
UH0106	110	2,108	178	12	130	5,391	30.3	42	73%
UH0240	110	673	50	13	32	1,357	27.1	42	64%
UH0241	110	711	50	14	32	1,208	24.2	38	64%
UH0242	110	773	53	15	34	1,147	21.6	35	63%
UH0243	110	735	50	15	26	1,080	21.6	43	51%
UH0246	110	549	40	14	32	1,697	42.4	53	80%
UH0247	110	462	32	14	25	1,317	41.1	53	78%
UH0248	110	391	28	14	19	787	28.1	43	65%
UH0249	110	670	50	13	33	1,379	27.6	42	66%
UH0250	110	666	50	13	31	1,143	22.9	36	63%
UH0251	110	488	35	14	28	959	27.4	35	79%
UH0252	110	673	50	13	30	349	7.0	12	61%
UH0257	110	777	53	15	33	969	18.3	30	62%
UH0260	110	391	28	14	23	942	33.6	40	85%
UH0261	110	389	28	14	20	1,031	36.8	52	71%
UH0262	110	391	28	14	19	1,007	36.0	49	73%
UH0263	110	389	28	14	23	709	25.3	31	82%
UH0264	110	440	30	15	23	956	31.9	42	77%
<i>Average</i>		599	43	14	31		29.1	42	73%
<i>Total</i>		14,976	1,086			31,597		1,046	

Visual Arts Center									No. of Rooms = 2
VA0101	110	2,174	150	14	131	5,399	36.0	41	89%
VA0102	110	410	24	17	17	132	5.5	8	69%
<i>Average</i>		1,292	87	16	74		31.8	24	86%
<i>Total</i>		2,584	174			5,531		49	
AVERAGE		759	51	16	39		30.9	38	75%
TOTAL		82,700	5,585			172,432		4,095	
NO. OF ROOMS		109							

APPENDIX B – TEACHING LABORATORY UTILIZATION ANALYSIS BY BUILDING

Teaching Laboratory Utilization Analysis by Building

Room Id	Room Use Code	Assignable Sq. Ft.	No. of Stations	Assignable Sq. Ft. Per Station	Average Enrollment	Weekly Student Contact Hours	Weekly Seat Hours	Weekly Room Hours	Hours in Use Student Station Occupancy %
Biological Sciences No. of Rooms = 12									
BI0106	210	996	24	42	24	1,155	48.1	48	100%
BI0112	210	1,013	24	42	28	912	38.0	33	115%
BI0116	210	967	20	48	14	98	4.9	7	70%
BI0117	210	685	12	57	12	285	23.8	24	101%
BI0204	210	1,030	20	52	18	391	19.5	19	101%
BI0205	210	981	20	49	21	636	31.8	30	106%
BI0207	210	969	20	48	17	164	8.2	12	70%
BI0210	210	926	18	51	0	0	0.0	0	0%
BI0213	210	1,075	20	54	23	681	34.1	30	114%
BI0214	210	966	20	48	22	1,077	53.9	48	112%
BI0328	210	1,002	20	50	22	371	18.5	17	108%
BI0329	210	1,013	20	51	19	424	21.2	21	101%
<i>Average</i>		969	20	49	18		26.0	24	105%
<i>Total</i>		11,623	238			6,193		289	
Chaparral Hall No. of Rooms = 2									
CH0117	210	2,011	24	84	24	843	35.1	35	100%
CH0130	210	1,170	24	49	25	432	18.0	16	116%
<i>Average</i>		1,591	24	66	25		26.6	25	105%
<i>Total</i>		3,181	48			1,275		51	
Chemical Sciences No. of Rooms = 8									
CS0129	210	1,238	16	77	30	723	45.2	24	188%
CS0131	210	1,218	20	61	23	702	35.1	30	117%
CS0221	210	1,220	20	61	23	713	35.7	32	111%
CS0231	210	1,224	20	61	24	288	14.4	12	120%
CS0233	210	1,218	20	61	24	729	36.5	30	122%
CS0321	210	1,219	20	61	14	126	6.3	9	70%
CS0335	210	938	20	47	12	72	3.6	6	60%
CS0336	210	1,218	20	61	15	237	11.9	14	82%
<i>Average</i>		1,187	20	61	21		23.0	20	120%
<i>Total</i>		9,493	156			3,591		158	
College Of Education No. of Rooms = 16									
CE0202	210	1,272	24	53	20	240	10.0	12	85%
CE0207	210	813	24	34	8	125	5.2	15	34%
CE0209	210	711	24	30	12	224	9.4	17	54%
CE0213	210	835	30	28	21	690	23.0	31	74%
CE0217	210	568	24	24	16	220	9.2	13	68%
CE0302	210	803	24	33	14	163	6.8	11	60%
CE0303	210	816	24	34	13	421	17.6	37	48%
CE0308	210	837	30	28	23	623	20.8	27	77%
CE0312	210	936	24	39	22	163	6.8	8	90%
CE0313	210	780	25	31	21	252	10.1	13	75%

Teaching Laboratory Utilization Analysis by Building

Room Id	Room Use Code	Assignable Sq. Ft.	No. of Stations	Assignable Sq. Ft. Per Station	Average Enrollment	Weekly Student Contact Hours	Weekly Seat Hours	Weekly Room Hours	Hours in Use Student Station Occupancy %
CE0314	210	947	24	39	17	129	5.4	8	71%
CE0316	210	844	24	35	14	351	14.6	23	64%
CE0320	210	921	28	33	0	0	0.0	0	0%
CE0353	210	798	28	29	28	482	17.2	17	100%
CE0355	210	788	30	26	26	579	19.3	23	83%
CE0364	210	802	30	27	26	241	8.0	10	84%
<i>Average</i>		842	26	33	18		11.8	17	69%
<i>Total</i>		13,471	417			4,904		266	

Health & Physical Education Addition (Nursing Skills Lab)									<i>No. of Rooms = 1</i>
NS0257	210	1,922	12	160	30	243	20.3	12	173%
<i>Average</i>		1,922	12	160	30		20.3	12	173%
<i>Total</i>		1,922	12			243		12	

Health & Physical Education Complex									<i>No. of Rooms = 4</i>
HP0119	210	2,853	15	190	22	267	17.8	12	148%
HP0234	210	1,475	12	123	23	415	34.6	27	128%
HP0239	210	1,403	12	117	15	342	28.5	25	114%
HP0250	210	1,471	15	98	19	439	29.2	31	96%
<i>Average</i>		1,801	14	132	20		27.1	24	116%
<i>Total</i>		7,202	54			1,463		95	

Jack H. Brown Hall									<i>No. of Rooms = 11</i>
JB0141	210	1,369	30	46	38	1,404	46.8	36	131%
JB0143	210	1,498	30	50	38	1,876	62.5	48	130%
JB0252	210	1,152	25	46	28	444	17.8	16	111%
JB0255	210	803	15	54	28	556	37.1	20	185%
JB0257	210	1,455	30	49	35	1,447	48.2	38	126%
JB0356	210	1,163	24	48	26	519	21.6	19	114%
JB0358	210	1,167	24	49	26	481	20.0	19	105%
JB0359	210	1,173	30	39	24	494	16.5	22	75%
JB0360	210	1,146	24	48	25	479	20.0	20	100%
JB0382	210	455	15	30	0	0	0.0	0	0%
JB0390	210	984	18	55	33	388	21.6	12	180%
<i>Average</i>		1,124	24	47	27		30.5	23	125%
<i>Total</i>		12,365	265			8,088		250	

Performing Arts									<i>No. of Rooms = 6</i>
PA0133	210	517	12	43	16	64	5.3	4	133%
PA0138	210	893	20	45	11	159	8.0	14	58%
PA0223	210	359	20	18	14	151	7.6	12	64%
PA0224	210	358	10	36	15	102	10.2	7	145%
PA0225	210	764	30	25	21	438	14.6	21	69%
PA0227	210	684	24	29	14	286	11.9	20	60%

Teaching Laboratory Utilization Analysis by Building

Room Id	Room Use Code	Assignable Sq. Ft.	No. of Stations	Assignable Sq. Ft. Per Station	Average Enrollment	Weekly Student Contact Hours	Weekly Seat Hours	Weekly Room Hours	Hours in Use Student Station Occupancy %
<i>Average</i>		596	19	33	15		10.3	13	74%
<i>Total</i>		3,575	116			1,199		77	

Physical Sciences									<i>No. of Rooms = 9</i>
PS0012	210	1,022	20	51	18	378	18.9	21	90%
PS0106	210	352	9	39	0	0	0.0	0	0%
PS0123	210	927	24	39	21	418	17.4	20	89%
PS0124	210	1,076	20	54	23	813	40.7	36	113%
PS0128	210	1,190	24	50	14	71	3.0	5	58%
PS0304	210	933	18	52	16	112	6.2	7	89%
PS0320	210	1,188	24	50	23	348	14.5	15	97%
PS0323	210	1,167	20	58	23	276	13.8	12	115%
PS0326	210	1,046	18	58	0	0	0.0	0	0%
<i>Average</i>		989	20	50	15		13.7	13	99%
<i>Total</i>		8,901	177			2,417		116	

Social & Behavioral Sciences									<i>No. of Rooms = 11</i>
SB0003	210	642	12	54	22	245	20.4	11	179%
SB0005	210	820	20	41	8	94	4.7	12	40%
SB0009	210	957	14	68	9	122	8.7	14	63%
SB0106	210	595	12	50	7	27	2.2	4	58%
SB0356	210	981	20	49	31	626	31.3	25	127%
SB0359	210	1,188	18	66	22	302	16.8	14	122%
SB0361	210	992	25	40	20	581	23.2	30	77%
SB0364	210	498	16	31	15	90	5.6	6	94%
SB0459	210	1,197	20	60	23	505	25.2	22	117%
SB0461	210	1,124	20	56	15	272	13.6	16	87%
SB0463	210	1,531	30	51	23	778	25.9	32	81%
<i>Average</i>		957	19	51	18		17.6	17	96%
<i>Total</i>		10,525	207			3,641		184	

University Hall									<i>No. of Rooms = 2</i>
UH0025	210	793	18	44	14	82	4.6	6	76%
UH0038	210	1,166	18	65	24	326	18.1	13	137%
<i>Average</i>		980	18	54	19		11.3	10	118%
<i>Total</i>		1,959	36			408		19	

Visual Arts Center									<i>No. of Rooms = 15</i>
VA0108	210	2,035	24	85	13	200	8.3	15	54%
VA0111	210	689	24	29	19	192	8.0	10	80%
VA0112D	210	1,004	24	42	21	498	20.8	25	84%
VA0117	210	2,098	24	87	20	154	6.4	8	83%
VA0123C	210	615	15	41	17	131	8.7	8	113%
VA0123F	210	1,637	10	164	11	101	10.1	8	131%
VA0123M	210	2,272	10	227	19	361	36.1	19	189%

Teaching Laboratory Utilization Analysis by Building

Room Id	Room Use Code	Assignable Sq. Ft.	No. of Stations	Assignable Sq. Ft. Per Station	Average Enrollment	Weekly Student Contact Hours	Weekly Seat Hours	Weekly Room Hours	Hours in Use Student Station Occupancy %
VA0221	210	1,363	24	57	22	404	16.8	18	94%
VA0222	210	1,712	14	122	28	322	23.0	12	197%
VA0224	210	1,005	24	42	22	812	33.9	37	93%
VA0226	210	1,383	24	58	20	624	26.0	31	84%
VA0232	210	1,232	24	51	23	782	32.6	33	99%
VA0302	210	1,359	18	76	21	655	36.4	31	118%
VA0305	210	2,307	24	96	27	208	8.7	8	113%
VA0306	210	1,713	24	71	22	508	21.2	23	92%
<i>Average</i>		1,495	20	83	20		19.4	19	105%
<i>Total</i>		22,424	307			5,952		284	
AVERAGE		1,099	21	57	19		19.4	19	102%
TOTAL		106,641	2,033			39,374		1,799	
NO. OF ROOMS		97							