

Appendix A
Utilization Analysis

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Utilization Analysis

Buildings and Rooms

Gavilan College



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CANNON
Merle E. Cannon

2510 Encinal Avenue, Alameda, CA 94501

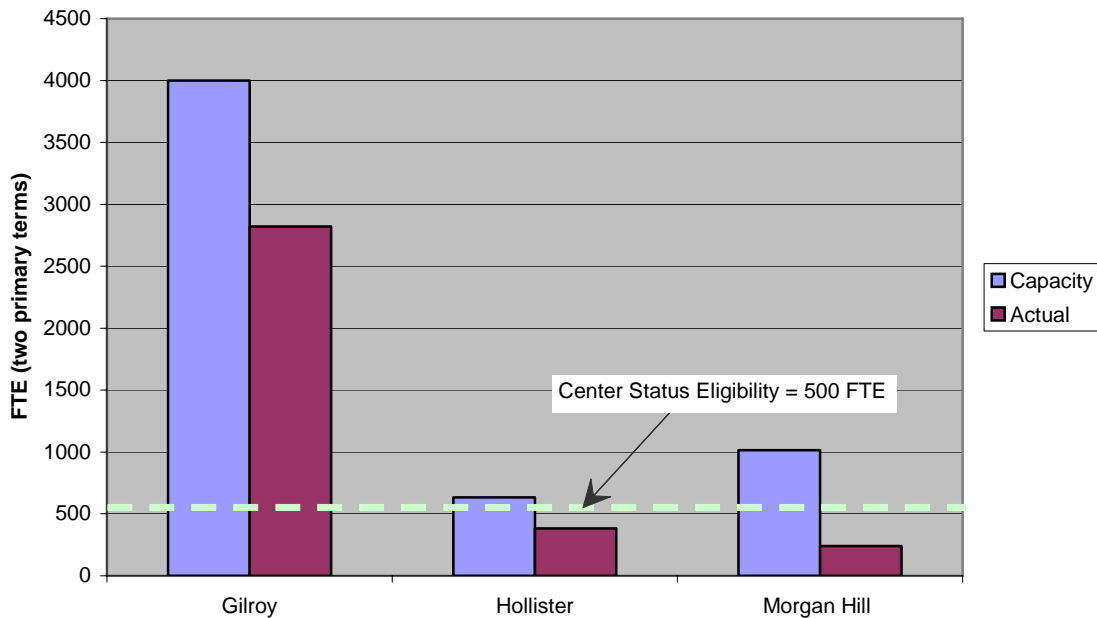
Utilization Analysis
Buildings and Rooms
Gavilan Community College District
(Based on Fall 2004)

The purpose of this analysis is to provide information related to the use of lecture and laboratory rooms listed in the District's **Space Inventory, 2005**. This information can be useful in making decisions about changes in space configuration in each of the buildings during renovation and remodeling in a way that will improve the overall *capacity-to-load ratios*. *Capacity-to-load ratios* are a critical component in determining eligibility of the District in the State Capital Outlay Program.

The 2005 updated space inventory was used to compute capacity; Fall 2004 enrollment data was used for actual enrollment. The actual enrollment by room assignment was provided by the District to include both regular and daily census data for the entire semester. As a control check, the Total Average WSCH was compared to that total in the District's CCFS-320 report submitted to the State.

In summary, the FTE production for Fall 2004 shows that each site has built in capacity to absorb additional enrollment without new buildings. Existing enrollments at Hollister and Morgan Hill are also below the threshold for qualification as State-recognized centers although both have the built in capacity to meet the threshold of 500 FTEs.

FTE Production-Capacity vs. 2004 Actual
Gavilan Community College District



Key Factors used in Determining Capacity

The State of California has established standards that must be used by Community Colleges to determine the capacity of their instructional spaces (*California Code of Regulations, Title 5, Section 57028*).

Lecture Classrooms (room types 110-115)

This standard is used for determining space allocations for Lecture (Room Type 110) and Lecture Service (Room Type 115)

Lecture space allocations usually vary from 11.5 to 25.0 ASF/station depending on floor space; room configurations, type of seating and room service requirements (projection rooms, A.V. storage, maps storage, etc.) State standards provide for an average of 15 ASF/station. For college's with an enrollment less than 140,000 WSCH, a room must be in use 48 hours of the 70 hour week; for college's with an enrollment of 140,000 WSCH or more, a room must be in use 53 hours of the 70 hour week. Since Gavilan College has an enrollment falls in the former category, the details of the computation of the standard are illustrated for a college with less than 140,000 WSCH.

Formula components: **Room Use = 68.6% (48 out of 70 hrs)**
 Station Use (when room is in use) = 66%
 ASF/station (average) = 15.0 ASF

Computing the standard:

$$\begin{aligned} \text{ASF} &= \text{WSCH} \times (15 \text{ ASF per station} / (66\% \times 48 \text{ hrs per week})) \\ \text{ASF} &= \text{WSCH} \times 0.473 \end{aligned}$$

To compute the WSCH capacity of space, the formula is:

$$\text{WSCH} = \text{ASF} / 0.473 \quad \longleftarrow$$

Laboratories (room types 210-255)

This standard is used for determining space allocations for Laboratories (Room Types 210, 220, 230, 250) and Laboratory Service (Room Types 215, 225, 235, 255). Until 2001, 230-255 spaces were typically used to identify lab type spaces that were not directly related to instruction or non-WSCH generating facilities. In 2001, the state created a software that incorporated these non-WSCH generating spaces into the computation of capacity for WSCH generating Laboratory space. It is now important for districts to assess the categorization of its non-WSCH generating spaces accordingly.

Laboratory space allocations vary depending on the equipment used, the instructional mode, and the activities that the student performs. The allocations for laboratories vary depending on the subject grouping since some programs require larger station sizes than others. State standards generalize the utilization rates as follows:

Formula components: **Room Use = 39.3% (27.5 out of 70 hrs)**
 Station Use (when room is in use) = 85%
 ASF/station (vary) = 30 – 200 ASF

Computing the standard:

$ASF = WSCH \times (ASF \text{ per station } / (85\% \times 27.5 \text{ hrs per week}))$
 $ASF = WSCH \times \text{Factor, where factor} = ASF/100 \text{ WSCH}$ (see next page)

To compute the WSCH capacity of space, the formula is:

$$WSCH = (ASF / \text{Factor}) \times 100 \longleftarrow$$

Example: Computation of laboratory allocation

A laboratory and its supporting service spaces are to be constructed to accommodate a projected 1000 WSCH in the Biological Sciences subject area. What is the computed space requirement?

For biological sciences (see TOP code 0400 on next page):

Factor = 55 ASF/station or 235 ASF per 100 WSCH

Therefore,

$ASF = 1000 \text{ WSCH} \times 55 \text{ ASF per station} / (85\% \times 27.5 \text{ hours per week})$

ASF = 2350 assignable square feet (ASF)

Or,

$ASF = WSCH \times \text{Factor, where factor} = 235 \text{ ASF per } 100 \text{ WSCH}$

ASF = 1000 WSCH x 235 ASF per 100 WSCH

ASF = 2350 assignable square feet (ASF)

LABORATORY STANDARDS

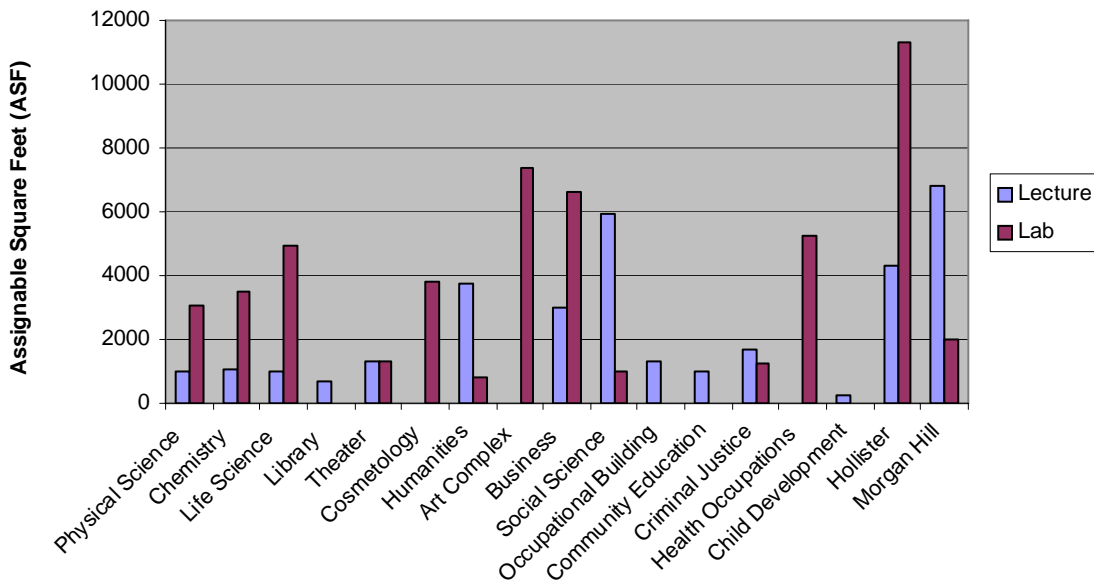
TAXONOMY	SUBJECT GROUP	ASF/100 WSCH	ASF per STATION
0100	Agriculture and Natural Resources	492	115
0115	Agricultural & Forestry Power/Machinery	856	200
0200	Architecture and Environmental Design	257	60
0400	Biological Sciences	235	55
0500	Business and Management	128	30
0600	Communications	214	50
0700	Computer and Information Science	171	40
0800	Education	321	75
0936	printing and Lithography	342	80
0937	Tool and Machine	385	90
0945	Mechanical Technology	556	130
0947	Diesel Technology	856	200
0948	Automotive Technology	856	200
0950	Aeronautical and Aviation Technology	749	175
0952	Construction Crafts/Trades Technology	749	175
0954	Chemical Technology	556	130
0956	Industrial Technology	385	90
All other 900s	(Engineering)	321	75
1000	Fine and Applied Arts	257	60
1100	Foreign Language	150	35
1200	Health Services	214	50
1300	Consumer Education/Home Economics	257	60
1400	Law	150	35
1500	Humanities	150	35
1600	Library Science	150	35
1700	Mathematics	150	35
1800	Military Studies	214	50
1900	Physical Sciences	257	60
2000	Psychology	150	35
2100	Public Affairs and Service	214	50
2200	Social Sciences	150	35
3000	Commercial Services	214	50
4900	Interdisciplinary	257	60

Reference: California Code of Regulations, Title 5, Section 57028

Results of the Analysis

Since lecture and laboratory spaces are the only spaces used in the State’s computation of capacity, only those buildings with such spaces were evaluated. The distribution of these spaces is shown in the diagram below. Hollister consists of the downtown and aviation facilities. The Morgan Hill site includes six large lecture rooms (each with “computed capacities” between 65-95 students). The Science buildings collectively (30%), the Health Occupations building (14%), the Arts Complex (19%), Cosmetology (10%), and the Business building (17%) together provide 90% of the laboratory space on the Gilroy campus while Social Science (27%), Humanities (17%), and Business (14%) together provide roughly 58% of the lecture space on the Gilroy campus; the remainder of the lecture space on the campus is distributed throughout the remaining buildings.

Distribution of Lecture and Lab Space (ASF)
By Building
2005 Gavilan Space Inventory



The calculation of the capacities was completed on a room-by-room basis and the total capacity of the lecture and lab space for each building (criminal justice, arts, Hollister, and Morgan Hill were each consolidated into their respective “sites”) was summed up. This was then compared to the load (actual enrollment) that occurred in the spaces to arrive at the utilization rates (actual enrollment divided by the computed capacity).

The use of the Science building **lecture** rooms nearly meets the expected usage while all the rest of the buildings are just above or lower than 50%. With the exception of the Humanities building, **laboratory** facilities are all under 75% utilization. The Science

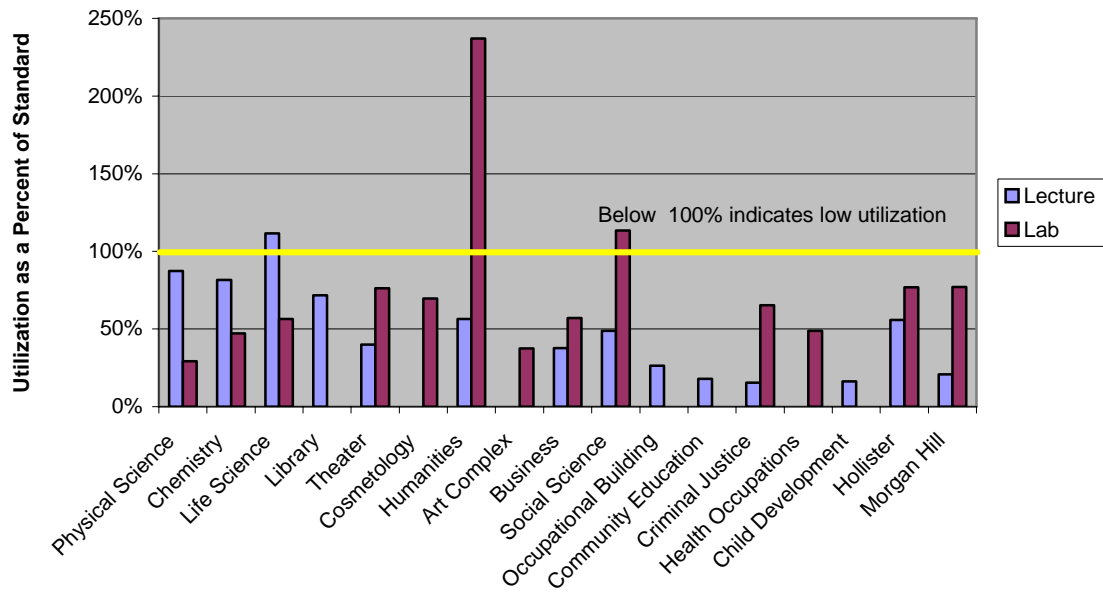
complex laboratory spaces, collectively, have a utilization rate below 50% which translates to the ability of these disciplines to double enrollment without adding any space.

The room utilization detail is provided in Appendix A. Note that the computed capacities for the service areas for lecture and lab space are wrapped into the actual instructional spaces; the spaces that support these instructional rooms are included as part of the formula allocation. *Special Note: A close scrutiny of the data in this room detail leads one to believe that perhaps the schedule in the database does not always accurately reflect the real location of the activity. For example, Life Science 104, a 1,656 ASF Lab shows no laboratory usage in Fall 2004. This is one of the reasons why it seemed more appropriate and useful to summarize usages by building.*

Space Use Summary By Building/Complex

<i>Building/Complex</i>	Space ASF		Utilization Rates	
	Lecture	Lab	Lecture	Lab
Physical Science	970	3,051	87%	29%
Chemistry	1,041	3,519	82%	47%
Life Science	985	4,956	112%	56%
Library	695	0	72%	n/a
Theater	1,315	1,282	40%	76%
Cosmetology	0	3,800	n/a	70%
Humanities	3,766	836	56%	237%
Art Complex	0	7,349	n/a	37%
Business	2,975	6,618	38%	57%
Social Science	5,966	979	49%	113%
Occupational Building	1,327	0	26%	n/a
Community Education	1,008	0	18%	n/a
Criminal Justice	1,704	1,222	16%	65%
Health Occupations	0	5,253	n/a	49%
Child Development	277	0	16%	n/a
<i>Hollister</i>	4,316	11,339	56%	77%
<i>Morgan Hill</i>	6,838	2,031	21%	77%

Utilization Rates - Fall 2004
Inventoried Lecture and Lab Rooms
Gavilan Community College District



Lecture and Lab Room Utilization by Building

	Capacity			DHR	Fall 2004				Utilization Rates		PE Lab =	O/C=		
	Lecture	Lab	Total		Lecture	Lab	Lab w/ DHR	Total	Lecture	Lab				
2 Physical Science	2051	1187	3238	0	1790	347	347	2137	87%	29%				
3 Chemistry	2201	1369	3570	31	1794	616	647	2441	82%	47%				
4 Life Science	2082	2178	4261	0	2325	1228	1228	3553	112%	56%				
5 Gymnasium	0	0	0	1816	501	2621	4221	4722						
6 Library	1469	0	1469	2110	1053	1206	3316	4369	72%	n/a	PE Lab =	7.5%		
7 Theater	2780	499	3279	91	1108	289	380	1488	40%	76%	O/C=	8.3%		
8 Student Union	0	0	0	35	73	15	50	123						
9 Maintenance	0	0	0	0	0	0	0	0						
10 Cosmetology	0	1776	1776	0	309	1236	1236	1545	n/a	70%				
11 Humanities	5767	431	6199	303	3251	719	1022	4273	56%	237%				
12 Art	0	1790	1790	287	393	609	896	1289	n/a	50%				
16 Art Rehearsal	0	1070	1070	8	878	167	175	1053	n/a	16%				
Total Arts Complex	0	2860	2860	295	1271	776	1071	2342	n/a	37%				
14 Business	6290	1979	8269	563	2372	566	1129	3501	38%	57%				
15 Social Science	12613	381	12994	180	6158	252	432	6590	49%	113%				
17 Field Storage	0	0	0	0	0	0	0	0						
18 Paint Storage	0	0	0	0	0	0	0	0						
19 Gardening Storage	0	0	0	0	0	0	0	0						
20 Gas Locker	0	0	0	0	0	0	0	0						
21 Institutional Storage	0	0	0	0	0	0	0	0						
25 Museum-Chapel	0	0	0	0	0	0	0	0						
28 Admin Services/Human Rel	0	0	0	0	0	0	0	0						
29 HR Conference Center	0	0	0	0	0	0	0	0						
30 Welding Bunker	0	0	0	0	0	0	0	0						
31 Occupational Building	2805	0	2805	260	739	387	647	1386	26%	n/a				
34 Athletic Storage	0	0	0	0	0	0	0	0						
35 Community Education	2131	0	2131	0	380	88	88	468	18%	n/a				
36 Criminal Justice 200	0	50	50	0	0	0	0	0						
37 Criminal Justice 100	1167	0	1167	0	0	0	0	0						
38 Criminal Justice 300	2436	0	2436	0	560	373	373	933						
39 Criminal Justice 400	0	432	432	0	0	0	0	0						
46 CJ Shed A	0	45	0	0	0	0	0	0						
47 CJ Shed B	0	45	0	0	0	0	0	0						
Total CJ	3603	572	4085	0	560	373	373	933	16%	65%				
40 Mayock House	0	0	0	0	0	0	0	0						
41 Business Office	0	0	0	0	0	0	0	0						
50 Health Occupations	0	2455	2455	3	724	1195	1198	1922	n/a	49%				
51 Child Development	586	0	586	433	95	9	442	537	16%	n/a				
52 Adaptive PE	0	0	0	0	0	0	0	0						
Gilroy Campus Total	44378	15687	59977	6120	24503	11923	17827	42330	55%	114%	3,998	2,822		
100 Hollister Center	6378	642	7020	73	3616	885	958	4574						
1 Aviation	1072	1387	2459	0	549	600	600	1149						
Hollister Total	7450	2029	9479	73	4165	1485	1558	5723	56%	77%	632	382		
200 Morgan Hill Center	14457	790	15247	167	3002	442	609	3611						
Morgan Hill Total	14457	790	15247	167	3002	442	609	3611	21%	77%	1,016	241		
Inventory Total	66285	18506	84703	6360	31670	13850	19994	51664						
O/C Off-campus	0	0	0	1128	889	2559	3798	4687						
Grand Total	66285	18506	84703	7488	32559	16409	23792	56351						

	Capacity	Actual
Gilroy	3998	2822
Hollister	632	382
Morgan Hill	1016	241