

University of West
Georgia

Classroom Study Fall 2012
DRAFT

Table of Contents

Overview	2
Findings Summary	2
I – Terms and Classroom Summary	4
II – Classroom Utilization	5
III – Time by Day Distribution	8
IV – Room Needs	10
V – Appendix-Room Listing.....	15

List of Tables

Table 1: Classroom Summary – Fall 2012	4
Table 2: Classroom Standards	5
Table 3: Classroom Utilization: Summary (Fall 2012)	6
Table 4: Classroom Utilization by College (Fall 2012)	6
Table 5: Classroom Utilization by Building (Fall 2012).....	7
Table 6: Classroom Utilization by Size (Fall 2012)	7
Table 7: Time By Day Classrooms: All Day (95 Classrooms-Fall 2012)	8
Table 8: Time By Day Classrooms: 8am to 5pm Fall 2012	9
Table 9: Classroom Needs Summary	10
Table 10: USG Metric Needs.....	11
Table 11: Classroom Needs Detail: (9am to 5pm, 25.6 WRH Expected).....	12
Table 12: Classroom Needs Detail: By College (25.6 WRH Expected, 9am-5pm, 40 hours available)	13
Table 13: Room Size Versus Class Size	13
Table 14: USG Classroom Graph-Fall 2012	14
Table 15: Maximize Classrooms.....	14

Overview

Comprehensive Facilities Planning, Inc. is conducting an assessment of the University of West Georgia existing classrooms used for scheduled instruction. The following purposes for this assessment have been identified:

1. Examine the utilization of classrooms from the Fall 2012 class file.
2. Compare the Fall 2012 classrooms supply and utilization to typical guidelines and the USG classroom metric to determine classroom need.

Findings Summary

1. **8am-5pm Utilization:** UWG's classroom demand is driven by the daytime hours. The evening programs peak use is just over half of the daytime peak in demand on classrooms. Therefore, 8am-5 pm utilization was used to start the analysis of utilization.
 - a. The 95 classrooms are utilized at 23.9 Average Weekly Room Hours (WRH-average of hours classrooms are scheduled from 8am to 5pm, M-F, or 45 available hours) compared to typical guidelines which range from 26 to 31.5 WRH for daytime usage. 28.5 Average WRH out of 45 hours available, or 64% usage, is considered solid utilization.
 - b. The 56 'shared' classrooms (shared usage by CAH, CSM, and CSS) are utilized at 28.3 Average WRH which is considered good utilization with some room left before a maximum capacity of 31.5 hours is met.
 - c. The 43 'non-shared' classrooms are utilized at 18.5 Average WRH which indicates there may be a surplus of classrooms or a potential for enrollment growth in these rooms. However, Boyd, Pafford, Richards, and TLC, where many of these 'non-shared' rooms exist, are all over 29 Avg WRH. The three rooms in the Education Annex are used at only 3.3 Avg WRH but the Nursing room has no reported usage due to their scheduling practices. It is therefore a handful of rooms with very low usage that significantly lowers the average for the non-shared classrooms.
 - d. 8am classes are almost nonexistent showing only 2.4% of classes meeting during this hour compared to the peak of 14.7% meeting at 11am. However, a 9.4% rate at 4pm is very good. This finding suggest that a better time frame would be to use 9am to 5pm (40 available hours) which yields a goal of 25.6 Avg WRH (64%) to measure classroom needs
2. **Classroom Needs:** Classroom needs were calculated based on a range of guidelines from the 26 (minimum), 28.5 (solid), and 31.5 (capacity) WRH for the 8am to 5pm timeframe. The calculation was also performed for the 9am to 5pm timeframe using a 25.6 WRH goal which best reflects the current scheduling practice at UWG.
 - a. The 9am to 5pm classroom need calculation shows a need of 87 classrooms compared to the current supply of 95. If desirable, some of the least desirable or lowest used rooms could be re-purposed. The corollary to removing some rooms is that these excess rooms provide an opportunity for some enrollment growth.
 - b. Overall there is a good mixture of classroom size ranges to meet demand.

3. **USG Classroom Metric:** The USG metric does not look at a timeframe. It considers all hours scheduled including weekends. The USG Classroom metric is calculated by dividing the Weekly Student Contact Hours (enrollments * hours in class) by the product of total seats times a Weekly Room Hour goal of 40. USG set the bar at a range of .5 to .7 for the metric.
- a. UWG's metric was calculated to be .448 for the 95 classrooms reported which is slightly below the bar. The shared classrooms calculated to .499 or at the minimum of the bar set by USG.
 - b. To increase the classroom metric a reduction in seats, increase in Weekly Student Contact Hours (WSCH), or a combination of both is required. To reach a .5 metric (the minimum bar) would require a reduction of 482 seats or an increase of 9,598 WSCH (11% enrollment growth).
 - c. Removing the 8 least utilized rooms, which brings the classroom supply to the 87 recommended, would only account for 213 seats which is well below the 482 seat reduction needed to reach the .5 metric. Removing more rooms would leave the campus in a deficit position to handle the current daytime demand.
 - d. The USG metric is a good measure of the capacity of classrooms. However, in UWG's case, most of the excess capacity exists in the evening and weekend hours.
 - e. Overall to reach the USG range for classroom utilization would require more Weekly Student Contact Hours (i.e., more students) during the evening and weekend. Since USG set a WRH goal of 40, a large evening and possibly weekend program is required. This may not be either feasible or in UWG's mission.

I – Terms and Classroom Summary

Terms in this study	
WRH	Weekly Room Hours – Total hours a room is scheduled per week.
Avg WRH	Average WRH – Average of hours scheduled per week.
SO	Station Occupancy – How well seats are filled while a room is in use. There are times when SO may exceed 100%. This is caused by enrollments in a class exceeding the capacity of the room.
ASF	Assignable Square Feet
WSCH	Weekly Student Contact Hours (Hours in class times students)
CAH	College of Arts and Humanities
COE	College of Education
CSM	College of Science and Math
CSS	College of Social Sciences
INTERD	Interdisciplinary
NURS	Scholl of Nursing
RCB	Richards College of Business
VPAA	Provost and Vice President for Academic Affairs

Table 1 shows the supply of classrooms used for Fall 2012 and reported as 110-Classrooms for the USG classroom metric calculation. These rooms will be used in this study as a basis for demand, current utilization rates, and time spreading.

Table 1: Classroom Summary – Fall 2012

Type	Fall 2012				Fall 2011			
	Rooms	Capacity	ASF	ASF/Seat	Rooms	Capacity	ASF	ASF/Seat
Shared Classrooms	52	2,833	46,876	16.5	56	2,961	49,900	16.9
Non-Shared	43	1,819	36,143	19.9	51	2,206	45,590	20.7
Total	95	4,652	83,019	17.8	107	5,167	95,490	18.5

Findings:

1. CAH, CSM, and CSS share a group of classrooms labeled “Shared Classrooms.” The remainder of the classrooms, labeled Non-Shared, are controlled by individual units or colleges.
2. The Fall 2011 statistics included 8 computer classrooms (249 seats, 6,224 ASF) which are now grouped in the USG laboratory metric and are therefore not included in the Fall 2012 study.

II – Classroom Utilization

Assumptions for determining utilization

- The following methods will be used to determine classroom utilization and needs:
 - **Daytime 8am-5pm, Monday through Friday:** This method most accurately measures institutions, such as UWG, where the daytime Monday through Friday hours drive the classroom need. This method considers two factors, Weekly Room Hours (WRH) and Station Occupancy (SO). For the WRH measurement, typical state guidelines suggest classroom utilization rates should fall between 58% and 70% of the available hours where 70% is considered maximum capacity. In order to look at daytime versus all day, these percentages need to be applied to a time frame. Taking the available 45 hours (8am to 5pm, M-F, daytime) multiplied by guidelines yields an expectation of 26 (58%) to 31.5 (70%) Average WRH (i.e., on average classrooms should be used between 26 to 31.5 hours per week). This calculation also includes class change times so that a 50 minute class will be counted as one hour. Station Occupancy, a measurement of how many seats are filled while a room is in use, is the second measurement for this method.
 - Dependent on the institutions scheduling practices adjustments to the time frame or hours available may be made to reflect the local culture. These adjustments are then made to expected goals to determine classroom needs.
 - **USG Classroom Metric:** The USG metric uses all hours scheduled regardless of time or day (i.e., evening classes and weekend classes are included). The formula is Weekly Student Contacts Hours divided by the product of the capacity of all rooms times the expected Weekly Room Hour goal: $WSCH / (\text{Seats} * 40)$. This calculation ignores class change times so a 50 minute class is $5/6^{\text{th}}$ of an hour. USG's metric range for 'good' utilization is .5 to .7 for this calculation.

Table 2: Classroom Standards

	Daytime: 8am-5pm				USG Metric			
	Hrs Avail	Avg WRH	% WRH	SO	WSCH	Exp WRH	Seats	Metric
Classrooms	45	26.0-31.5	58%-70%	67%	All	40	All	.5-.7

*Standards used to compare to current utilization rates

Table 3: Classroom Utilization: Summary (Fall 2012)

	Rooms	8am-5pm, Mon-Fri				USG Metric			
		WRH	Avg WRH	% WRH	SO	Capacity	WSCH	WRH Goal	USG Metric
Shared	52	1,472.7	28.3	62.9%	72.6%	2,833	56,525.7	40	0.499
Non-Shared	43	795.6	18.5	41.1%	71.5%	1,819	26,876.0	40	0.369
Total	95	2,268.3	23.9	53.1%	74.1%	4,652	83,401.6	40	0.448

*Guidelines for Average WRH: 26 to 31.5, USG Metric: .5 to .7

Findings:

1. Overall daytime utilization of 23.9 Avg WRH for the 95 classrooms is below minimum guidelines of 26 WRH and well below capacity of 31.5 WRH indicating a surplus of classrooms.
2. The 56 shared classrooms are at 28.3 Avg WRH which is within acceptable guidelines. The 43 'Non-shared' rooms, at 18.5 Avg WRH, are well below the guidelines.
3. Daytime Station Occupancy (SO) of 74.1% for the 95 classrooms is above the guideline of 67%. These rates show that seats are well used and that the sizes of classrooms are well distributed to meet demand.
4. The USG metric for the 95 classrooms, at .448 is slightly below the guideline of .5 to .7 set by the state. The 52 shared classrooms are at the minimum expectation set by USG. This shows how even though the 52 shared rooms are used quite well during the 8am to 5pm hours, there is simply not enough evening or weekend hours scheduled at UWG to raise the utilization rates much above the minimum set by USG. The 5pm to 10pm time frame yields only 4.6 Avg WRH which is not enough to raise the total WRH to the USG WRH Goal of 40.
5. Fall 2011 had Avg WRH of 21.1 for the total, 26.5 for the shared, and 15.2 for non-shared. The computer classrooms (moved to labs per USG) were at 19.7 Avg WRH for Fall 2011.

Table 4: Classroom Utilization by College (Fall 2012)

College	Rooms	8am-5pm Standard				USG Metric			
		WRH	Avg WRH	% WRH	SO	Capacity	WSCH	Exp WRH	USG Metric
College of Arts and Humanities	20	544.9	27.2	60.5%	81.9%	804	17,013.8	40	0.53
College of Education	17	274.4	16.1	35.9%	73.3%	693	9,792.4	40	0.35
College of Science and Math	25	639.9	25.6	56.9%	71.2%	1510	26,414.6	40	0.44
College of Social Sciences	21	507.7	24.2	53.7%	77.1%	941	17,949.9	40	0.48
School of Nursing	1	9.0	9.0	20.0%	72.5%	40	390.5	40	0.24
Richards College of Business	11	292.5	26.6	59.1%	61.7%	664	11,840.3	40	0.45

* Guidelines for Average WRH: 26 to 31.5, USG Metric: .5 to .7

6. The Classroom Utilization by College table shows the distribution of classrooms, seats, and utilization by college.
7. The CAH classrooms come closest to guidelines with 27.2 Avg WRH and a USG metric of .53. COE's 17 classrooms have the lowest utilization rate which indicates a surplus of classroom space.

Table 5: Classroom Utilization by Building (Fall 2012)

Bldg	Rooms	8am-5pm Standard				USG Metric			
		WRH	WRH	%	SO	Capacity	WSCH	Exp	USG
Adamson	4	84.5	21.1	47.0%	67.5%	218	3,987.4	40	0.46
Anthro	3	61.0	20.3	45.2%	60.4%	147	1,734.3	40	0.29
Biology	8	178.0	22.3	49.4%	77.8%	429	7,385.6	40	0.43
Boyd	8	244.0	30.5	67.8%	82.0%	383	9,250.4	40	0.60
Callaway	2	35.1	17.6	39.0%	60.0%	107	1,113.8	40	0.26
Callaway Anx	2	42.9	21.5	47.7%	68.1%	122	1,624.7	40	0.33
Cobb	1	9.0	9.0	20.0%	66.7%	20	106.8	40	0.13
Colsm	6	86.0	14.3	31.8%	62.7%	257	2,486.6	40	0.24
Ed Ctr	9	187.4	20.8	46.3%	70.7%	399	7,203.3	40	0.45
Educ Anx	3	10.0	3.3	7.4%	109.1%	77	493.0	40	0.16
Human	13	325.6	25.1	55.7%	78.3%	450	8,407.1	40	0.47
Melson	4	54.9	13.7	30.5%	86.9%	92	1,299.8	40	0.35
Paffrd	17	505.5	29.7	66.1%	74.1%	738	16,622.4	40	0.56
Richards	7	207.9	29.7	66.0%	58.8%	446	7,853.0	40	0.44
TLC	8	236.5	29.6	65.7%	65.9%	767	13,833.4	40	0.45

* Guidelines for Average WRH: 26 to 31.5, USG Metric: .5 to .7

- The Classroom Utilization by Building table shows the distribution of classrooms around the campus and how well each building is utilized.
- This table helps to reflect that there may be less desirable buildings or in the case of Nursing, non-reported usage. For example, the 3 rooms in the Education Anx only have an Avg WRH rate of 3.3 and a USG Metric of .16.

Table 6: Classroom Utilization by Size (Fall 2012)

Size	Rooms	8am-5pm Standard						USG Metric			
		WRH	WRH	%	SO	Min	Max	Capacity	WSCH	Exp	USG
1-19	6	102.7	17.1	38.0%	63.8%	0.0	30.5	94	1,453.1	40	0.39
20-29	20	424.9	21.2	47.2%	77.3%	1.0	32.6	506	8,611.6	40	0.43
30-39	25	576.6	23.1	51.3%	71.5%	9.0	39.7	876	15,092.5	40	0.43
40-59	23	606.1	26.4	58.6%	71.4%	8.8	39.6	1036	20,626.5	40	0.50
60-79	9	208.2	23.1	51.4%	58.2%	15.2	32.7	633	8,736.0	40	0.35
80-99	4	109.1	27.3	60.6%	70.5%	15.8	33.4	345	7,139.0	40	0.52
100-149	6	187.4	31.2	69.4%	72.5%	27.0	33.5	681	14,954.4	40	0.55
150-249	1	29.2	29.2	64.8%	63.2%	29.2	29.2	184	3,287.9	40	0.45
>=250	1	24.1	24.1	53.6%	52.0%	24.1	24.1	297	3,444.5	40	0.29

* Guidelines for Average WRH: 26 to 31.5, USG Metric: .5 to .7

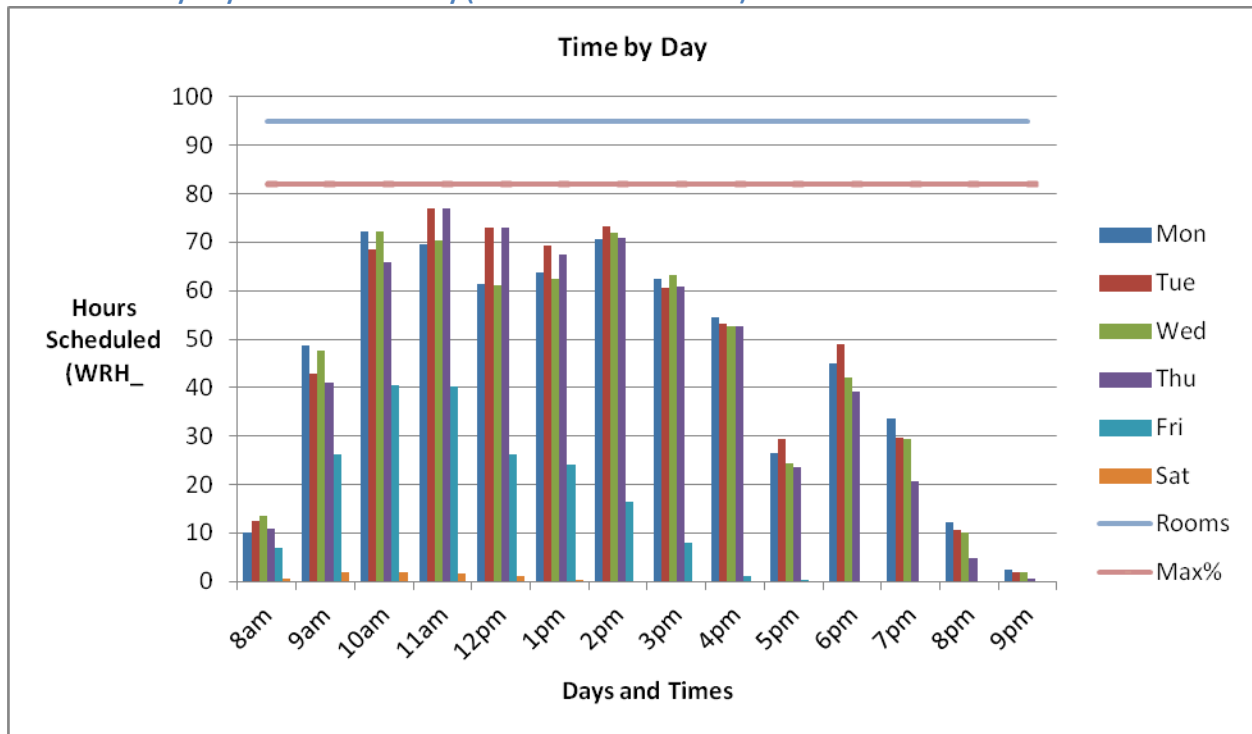
- The Classroom Utilization by Size table shows the distribution of classrooms by the sizes of rooms and how well each size range is utilized. The Min and Max WRH columns show in each size range the lowest and highest used room (see the room list in the appendix for individual rooms).
- The smallest rooms, 1-19 seats, have the lowest usage which is typical since class max limits are usually not set low enough to fully utilize these rooms.

III – Time by Day Distribution

Assumptions for Time by Day Usage

- Tables in this section show how class hours are currently distributed across days and times.
- The hours shown in the Time by Day tables are calculated by summing all individual class hours including class change times. Based on the beginning and end times, the summarized hours for all classes are then distributed into the appropriate bars for the bar chart and cells for the grids.
- The hours in the bars/cells can be compared to the number of rooms available to examine capacity.
- The Max % line is 86% of the total rooms available. This is typically where the demand for classrooms exceeds the supply. Inefficiencies caused by non-standard class times, single day classes, etc., cause the max% to be less than available rooms.

Table 7: Time By Day Classrooms: All Day (95 Classrooms-Fall 2012)



Findings:

1. The Time By Day table shows hours of classes meeting in classrooms from 8am through 10pm. This graph is shown to get an overall picture of how classes are scheduled.
2. The time spread of classes shows that UWG schedules classes primarily during the day. Distribution of classes is quite good from 9am through to 5pm.
3. 8am usage is almost nonexistent. Friday, at best, is half the use of the other days in the morning and slips to nothing in the afternoon.

4. The Max % line is not reached at any hour or day indicating a surplus of rooms even during the peak times.

Table 8: Time By Day Classrooms: 8am to 5pm Fall 2012

Time	Mon	Tue	Wed	Thu	Fri	Total	Time %	10am to 4pm %
8am	10.0	12.5	13.5	11.0	7.0	54.0	2.4%	
9am	48.6	43.0	47.6	40.9	26.2	206.3	9.1%	
10am	72.2	68.5	72.2	65.9	40.4	319.2	14.1%	
11am	69.5	77.1	70.5	76.9	40.2	334.1	14.7%	
12pm	61.4	73.1	61.1	73.1	26.3	295.0	13.0%	
1pm	63.7	69.4	62.5	67.4	24.1	287.1	12.7%	79%
2pm	70.6	73.2	72.0	71.0	16.3	303.1	13.4%	
3pm	62.4	60.6	63.4	60.7	8.1	255.2	11.3%	
4pm	54.4	53.2	52.5	52.6	1.1	213.7	9.4%	
Total	512.8	530.5	515.3	519.5	189.7	2,267.7	100.0%	
Day %	22.6%	23.4%	22.7%	22.9%	8.4%	100.0%		

*WRH – Cells are WRH (Class hours) plus class change time

5. Table 8 shows the distribution of classes for Fall 2012 daytime only in order to measure against some “best practice” policies.
6. In order to maximize classroom usage many universities have established time spreading policies. Some of the best, and simplest are:
- No more than 12.5% of classes at any given hour.
 - No more than 67% of classes occurring between 10am and 4pm.
 - At least 15% of class meetings on Friday.
7. The policy of 12.5% at any given hour is exceeded at 10am and 11am. The peak of 14.7% at 11am is only possible since there is a current surplus of classrooms available. This peak is mostly caused by the 11am to 12:20pm TR time slot.
8. The policy of no more than 67% of classes should meet between 10am and 4pm is exceeded showing 79% during these hours. This excess is almost solely caused by the lack of 8am classes.
9. Friday usage of 8.4% falls well short of the policy of 15% on Friday.
10. 8am usage is almost non-existent; however, a rate of 9.4% at 4pm is exceptional which partially makes up for the lack of 8am usage.
11. This chart shows how UWG is almost exclusively operating on a 9am to 5pm daytime schedule which will affect the determination of classroom needs.

IV – Room Needs

The tables below presents several different utilization scenarios of how many classrooms are required.

Classroom Needs Summary - How it works:

- The table below shows the current rooms, seats, and ASF (Assignable Square Feet). Calculations for these three items are performed for two time frames with varying WRH goals and a constant Station Occupancy goal of 67%.
- **Rooms:** The total WRH is divided by the expected WRH utilization goals to determine how many classrooms are needed. The calculation is performed for a standard 8am to 5pm time frame. The calculation also is done for a 9am to 5pm schedule since the time by day section of this report shows that 8am classes are almost non-existent and UWG is currently operating on a 9am to 5pm daytime schedule.
- **Seats:** The WSCH is divided by the product of SO Goal (67%) times the WRH Goal.
- **ASF:** The seat calculation times 18 (an average ASF per seat goal).

Table 9: Classroom Needs Summary

	Current	8am-5pm (45 hrs)			9am-5pm (40 hrs)		
		WRH	58% 26 WRH	64% 28.5 WRH	70% 31.5 WRH	WRH	64% 25.6 WRH
Rooms	95	2,268	88	80	72	2,213	87
		WSCH			WSCH		
Seats	4,652	82,326	4,726	4,311	3,901	80,151	4,673
ASF	83,019		85,067	77,605	70,214		84,114

Findings:

1. **For reference:** Current Average WRH from the Utilization section of this report showed 28.3 for the 52 shared classrooms, 18.5 for the 43 'non-shared' classrooms, and 23.9 for the 95 total classrooms for the 8am to 5pm time frame. The 9am to 5pm calculation has Average WRH at 27.6, 18.1 and 23.3 respectively. The current SO is 74% for the 95 classrooms which is above the guideline.
2. At the 64% WRH goal (28.5) for the 8am to 5pm time frame, UWG could reduce the total classrooms to 80, the total seats to 4,311, and the ASF to 77,605. The classrooms in Boyd, Paffrd, Richards, and TLC are all currently scheduled near 30 Avg WRH indicating the ability to achieve these goals.
3. At the 64% WRH goal (25.6) for the 9am to 5pm time frame, which more accurately depicts current practices, UWG could reduce the total classrooms to 87. Seat calculation of 4,673 and ASF of 84,114 are very close to the current numbers. Taking into account that the current SO rates are above the SO Goal combined with the fact that some rooms/buildings have very low utilization aligns well with the calculation of 8 less rooms but overall seat and ASF calculations are very close to current.

Table 10: USG Metric Needs

Reduce Seats				Increase WSCH			
Capacity	WSCH	WRH Goal	USG Metric	Capacity	WSCH	WRH Goal	USG Metric
4,652	83,402	40	0.448	4,652	83,402	40	0.448
4,170	83,402	40	0.500	4,652	93,000	40	0.500
3,475	83,402	40	0.600	4,652	111,700	40	0.600

*USG Classroom Metric guidelines suggest rates between .5 and .7

- The USG classroom metric does not calculate how many rooms are needed; it calculates an efficiency ratio using seats, WSCH, and a WRH goal. A range of .5 to .7 is determined to be 'good' utilization. To change the metric, seats must be reduced, WSCH must be increased, or a combination of both.
- Reduce Seats: Reducing seats by 482 to reach 4,170 seats would raise the metric to .5, or the minimum USG range. However, removing the 8 least utilized rooms as the Room Need model suggests, would only account for 213 seats. Removing more rooms would leave the campus in a deficit position to handle the current daytime demand.
- Increase WSCH: An increase in WSCH to 93,000 (11% increase in students) would be required to meet the .5 metric.
- Overall this table helps illustrate how the USG WRH goal of 40, and without class change minutes included, makes it difficult to achieve the .5 to .7 range without a larger evening and weekend programs than UWG currently has.

Classroom Needs Detail - How it works:

- The room's columns show how many classrooms exist for each size range for Fall 2012.
- Weekly Room Hours (WRH) are summarized by the size ranges. The WRH of all the classes in each size range are then used for a base.
- The Required Rooms columns show how many rooms are needed based on demand (WRH) and expected utilization goals. The total WRH for classes in each size range (based on actual class enrollment) are divided by the expected WRH goal to yield how many rooms are needed. The 9am to 5pm timeframe with a goal of 26.5 WRH is used for the detail section since it most accurately reflects the current scheduling practices.
- Best Fit:** In the detailed computation (not shown) a cascading factor is applied to each size range to allow some demand for a range to flow into a larger classroom (i.e., a 60% cascade factor is applied to the 1-19 size range, therefore 60% of the demand for 1-19 seat rooms would be allowed to "cascade" into the demand for the next range, or in this example, the 20-29 seat classroom range). Cascading factors decrease through the size ranges so that all demand is met.

Table 11: Classroom Needs Detail: (9am to 5pm, 25.6 WRH Expected)

Room Size	Rooms	WRH	Required	Cumulative		Best Fit
			Rooms	Rooms	Required	
1-19	6	412.5	16.1	6	16.1	6
20-29	20	767.5	30.0	26	46.1	28
30-39	25	493.6	19.3	51	65.4	25
40-59	23	289.1	11.3	74	76.7	15
60-79	9	50.5	2.0	83	78.6	4
80-99	4	102.5	4.0	87	82.6	3
100-149	6	80.7	3.2	93	85.8	4
150-249	1	14.1	0.5	94	86.3	1
>=250	1	3.1	0.1	95	86.5	1
Total	95	2,213.6	86.5			87

8. The Required Rooms columns show how many rooms are needed to satisfy demand by size range with an expectation of 25.6 WRH (64% utilization of the 9am to 5pm time frame).
 - a. The 1-19 size range shows a demand of 16.1 rooms with only 6 actual rooms available. However, limits for this range showed only a demand for 6.7 rooms during the Fall 2011 study which reflects that limits for these classes are typically set at or above 20. (Note: Class max limits were not supplied with the Fall 2012 USG class data set which this study is based on.
 - b. The 40-59 seat range has 23 rooms with a demand of only 11.3. However, this range helps catch up with the demand from the smaller ranges as can be seen under the cumulative columns showing that the supply of rooms has now caught up with the required rooms. The excess in this range also provides flexibility to handle changes made by departments to the configuration of section offerings and class sizes.
9. There are 13 rooms with 60-99 seats with only a need of 6 rooms in these two ranges. This suggests that some of these rooms could possibly be re-configured to have fewer seats.
10. Comparing the Best Fit column to the Required Rooms column helps to make future adjustments to sizes of classrooms that will be built, remodeled, or repurposed.
11. Overall there is a very good mixture of classroom size ranges to meet the demand of classes.

Table 12: Classroom Needs Detail: By College (25.6 WRH Expected, 9am-5pm, 40 hours available)

College	Size Range									Needs Total	Current Rooms
	1-19	20-29	30-39	40-59	60-79	80-99	100-149	150-249	>=250		
CAH	5.3	14.0	3.1	0.8	0.4	2.2	0.2	0.4	0.0	26.3	20
CSM	5.5	5.6	4.3	3.1	1.2	0.4	2.2	0.0	0.1	22.6	25
CSS	3.1	2.8	4.7	1.8	0.1	1.2	0.7	0.2	0.0	14.6	21
Sub Tot	13.9	22.4	12.1	5.7	1.7	3.8	3.1	0.6	0.1	63.5	66
COE	1.1	3.3	3.0	1.1	0.1	0.1	0.0	0.0	0.0	8.7	17
INTERD	0.4	2.4	0.0	0.1	0.1	0.1	0.0	0.0	0.0	3.1	0
NURS	0.0	0.4	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.8	1
RCB	0.7	1.5	4.1	3.9	0.1	0.0	0.0	0.0	0.0	10.4	11
Grand Tot	16.1	30.0	19.3	11.3	2.0	4.0	3.1	0.6	0.1	86.5	95

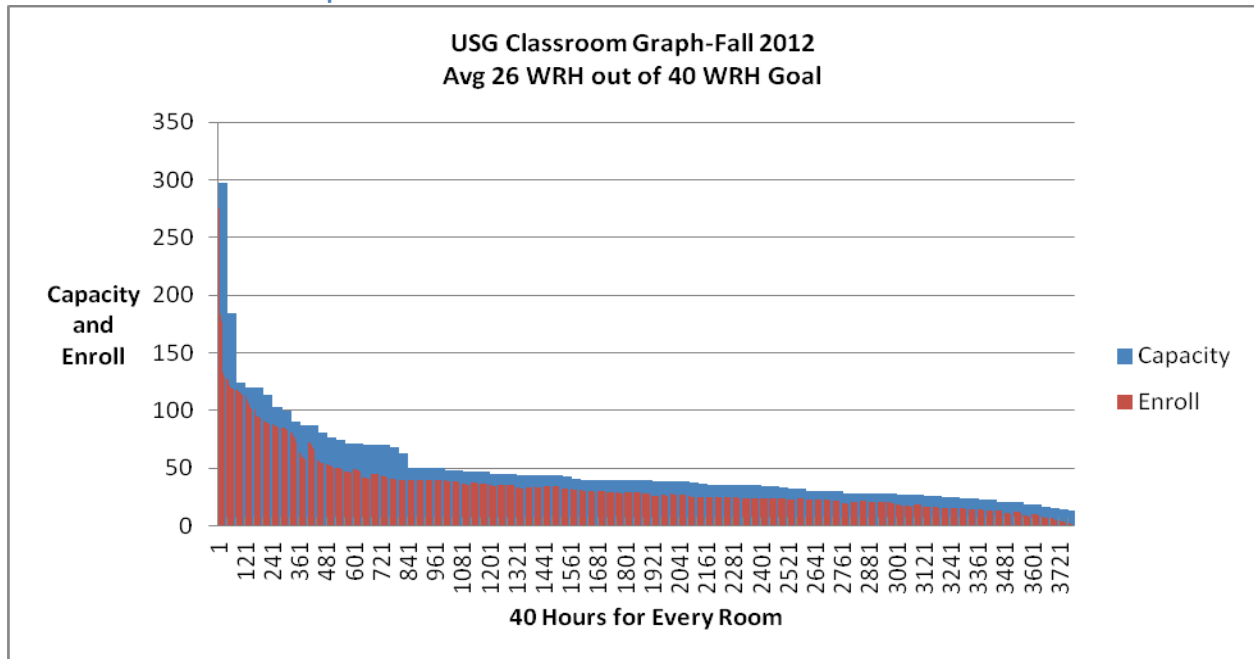
12. The Needs by College table shows how many rooms are need for each college and compares this against the current rooms. This helps to make decisions about the future classroom supply denoting where shortfalls and surpluses exist.

Table 13: Room Size Versus Class Size

Room Size	Class Size									Current Rooms
	1-19	20-29	30-39	40-59	60-79	80-99	100-149	150-249	>=250	
1-19	92.3%	7.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	6
20-29	35.1%	63.6%	1.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	20
30-39	22.1%	51.6%	24.0%	2.3%	0.0%	0.0%	0.0%	0.0%	0.0%	25
40-59	9.7%	27.2%	42.2%	20.4%	0.5%	0.0%	0.0%	0.0%	0.0%	23
60-79	2.7%	17.8%	28.8%	42.5%	8.2%	0.0%	0.0%	0.0%	0.0%	9
80-99	0.0%	5.6%	11.1%	36.1%	8.3%	38.9%	0.0%	0.0%	0.0%	4
100-149	3.1%	1.5%	4.6%	18.5%	10.8%	32.3%	29.2%	0.0%	0.0%	6
150-249	0.0%	0.0%	10.0%	0.0%	0.0%	10.0%	50.0%	30.0%	0.0%	1
>=250	0.0%	0.0%	0.0%	0.0%	0.0%	12.5%	50.0%	25.0%	12.5%	1

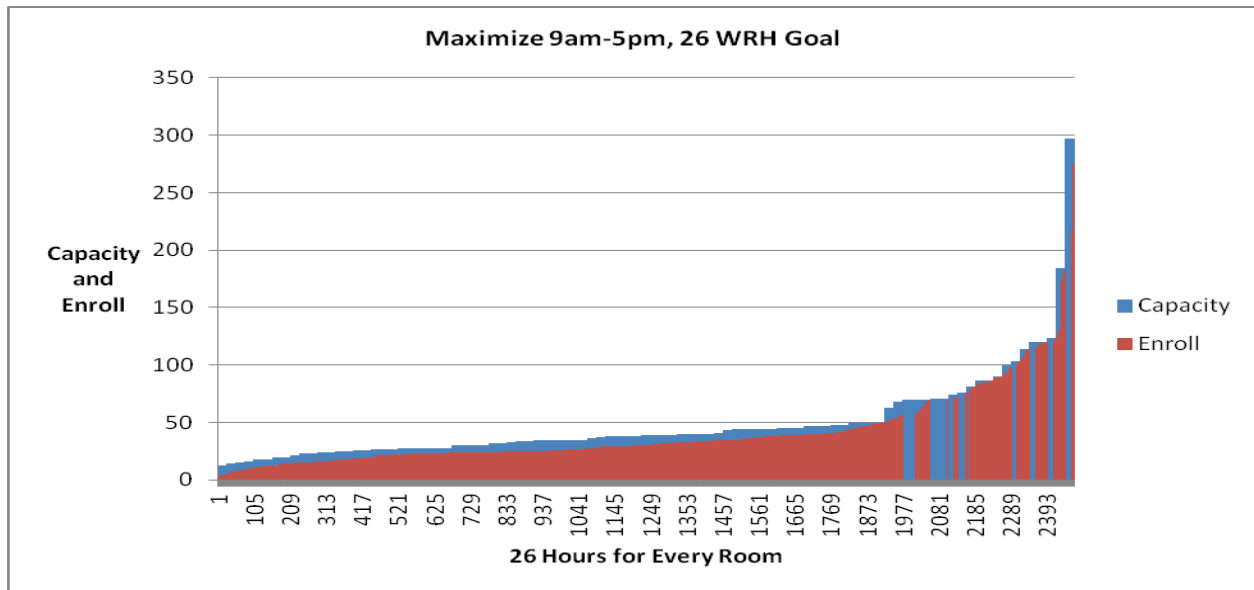
13. The Room versus class size table is a supplement to the detailed needs table. This table shows the percentage of classes scheduled into rooms based on sizes of classes and sizes of rooms. For example, 17.8% of the classes held in 60-79 seat rooms had enrollments between 20-29 students.

Table 14: USG Classroom Graph-Fall 2012



14. The USG Classroom Graph takes the average WRH for all classrooms and fills classes into rooms up to the average WRH (26 Avg WRH for UWG) based on enrollment. It plots against the 40 WRH goal and capacities. The space between the bars is excess capacity in each room.

Table 15: Maximize Classrooms



1. The Maximize graph looks at the 9am to 5pm time frame and fills every room to a goal of 26 WRH where the enrollment is less than or equal to the capacity. The space where no enrollments exist is the excess available space. The graph is hypothetical in that it plots where classes could have been scheduled not where they actually were scheduled.

V – Appendix-Room Listing

Bldg_Num	Bldg_Name	Room	College	Capacity	WRH_Day	SO%	WRH_All
0003	Cobb H	130	CAH	20	9.0	67.0%	9.0
0004	Melson	104	CSS	15	7.7	64.0%	11.8
0004	Melson	207	CSS	20	13.3	73.0%	16.0
0004	Melson	213	CSS	13	17.5	88.0%	23.7
0004	Melson	218	CSS	44	16.3	87.0%	25.7
0005	Adamson Hall	115	RCB	28	12.0	81.0%	23.3
0005	Adamson Hall	117	RCB	90	28.0	53.0%	40.8
0005	Adamson Hall	217	RCB	50	25.0	68.0%	34.0
0005	Adamson Hall	227	RCB	50	19.5	67.0%	28.2
0011	Anth	12	CSS	36	16.0	72.0%	16.0
0011	Anth	2	CSS	71	17.8	53.0%	20.8
0011	Anth	7	CSS	40	27.1	66.0%	27.1
0014	BusCol	1201	RCB	120	27.0	41.0%	33.0
0014	BusCol	1308	RCB	48	25.0	61.0%	27.9
0014	BusCol	1309	RCB	47	30.0	82.0%	32.7
0014	BusCol	2201	RCB	45	30.1	77.0%	38.8
0014	BusCol	2202	RCB	45	34.1	67.0%	42.8
0014	BusCol	2213	RCB	71	32.7	54.0%	38.3
0014	BusCol	2214	RCB	70	29.1	62.0%	35.1
0015	Callaway	120	CSM	39	12.0	40.0%	12.0
0015	Callaway	205	CSM	68	23.1	60.0%	25.8
0017	Callaway Annx	145	CSM	74	15.2	83.0%	15.9
0017	Callaway Annx	146	CSM	48	27.7	64.0%	31.4
0021	Boyd	206	CSM	39	24.3	50.0%	24.3
0021	Boyd	230LECTHA	CSM	120	33.5	81.0%	39.5
0021	Boyd	301	CSM	41	39.6	83.0%	39.6
0021	Boyd	302	CSM	38	23.3	63.0%	26.3
0021	Boyd	303	CSM	39	39.7	92.0%	45.7
0021	Boyd	304	CSM	30	27.9	77.0%	33.9
0021	Boyd	305	CSM	44	28.4	100.0%	28.4
0021	Boyd	307	CSM	32	27.3	73.0%	33.0
0023	Paffrd	102	CSS	50	30.2	61.0%	38.2
0023	Paffrd	106	CSS	43	36.5	72.0%	44.5
0023	Paffrd	107	CSS	25	28.4	97.0%	31.1
0023	Paffrd	109	CAH	30	29.0	81.0%	32.0
0023	Paffrd	110	CSS	38	33.3	75.0%	33.3
0023	Paffrd	111	CSS	21	12.1	58.0%	17.4
0023	Paffrd	112	CSS	34	30.3	72.0%	33.3
0023	Paffrd	204	CAH	35	36.3	86.0%	41.6
0023	Paffrd	206	CAH	40	33.4	66.0%	39.1
0023	Paffrd	208	CAH	33	27.2	85.0%	35.2
0023	Paffrd	302	CSS	50	33.5	78.0%	39.5
0023	Paffrd	305	CSS	40	33.0	83.0%	43.6

Bldg_Num	Bldg_Name	Room	College	Capacity	WRH_Day	SO%	WRH_All
0023	Paffrd	306	CAH	34	35.8	83.0%	38.8
0023	Paffrd	307	CAH	28	30.1	61.0%	33.1
0023	Paffrd	308	CAH	35	26.1	70.0%	34.8
0023	Paffrd	309	CSS	18	21.1	72.0%	29.1
0023	Paffrd	BONN	CSS	184	29.2	63.0%	32.7
0024	Human	130	CSS	27	23.9	74.0%	30.5
0024	Human	131	CAH	28	32.3	82.0%	32.3
0024	Human	203	CSS	47	20.8	79.0%	23.8
0024	Human	205	CAH	24	27.1	88.0%	29.9
0024	Human	206	CAH	26	27.0	89.0%	27.0
0024	Human	208	CAH	28	28.0	82.0%	28.0
0024	Human	209	CAH	28	30.0	77.0%	30.0
0024	Human	228	CSS	25	27.0	90.0%	29.7
0024	Human	229	CAH	27	32.6	84.0%	35.3
0024	Human	231	CAH	27	24.0	78.0%	24.0
0024	Human	234	CAH	37	12.2	68.0%	14.1
0024	Human	235	CAH	26	8.1	36.0%	10.8
0024	Human	312	CSS	100	32.7	65.0%	35.7
0031	Coliseum	2100	COE	81	15.8	65.0%	20.3
0031	Coliseum	2120	COE	23	16.0	81.0%	16.0
0031	Coliseum	2122	COE	32	9.0	54.0%	9.0
0031	Coliseum	3006	COE	38	18.1	56.0%	26.4
0031	Coliseum	3008	COE	39	18.2	61.0%	23.8
0031	Coliseum	3009	COE	44	8.8	54.0%	11.5
0034	TLC	1103	CSM	24	27.1	65.0%	32.1
0034	TLC	1104	CSM	16	25.9	93.0%	31.4
0034	TLC	1200	CAH	87	31.9	71.0%	31.9
0034	TLC	1203	CAH	87	33.4	94.0%	42.4
0034	TLC	1301	CSM	114	32.3	74.0%	32.9
0034	TLC	1303	CAH	124	31.3	68.0%	31.3
0034	TLC	1305	CSM	297	24.1	52.0%	25.9
0034	TLC	2105	CSM	18	30.5	65.0%	30.5
0058	Biolog	113	CSM	38	23.7	76.0%	27.7
0058	Biolog	114	CSM	63	25.9	49.0%	30.6
0058	Biolog	118	CSM	35	20.0	66.0%	20.0
0058	Biolog	144	CSM	35	17.9	79.0%	20.5
0058	Biolog	148	CSM	76	24.4	50.0%	28.6
0058	Biolog	150	CSM	44	15.4	53.0%	22.6
0058	Biolog	151	CSM	103	30.6	106.0%	33.6
0058	Biolog	241	CSM	35	20.1	48.0%	24.1
0060	Ed Ctr	200	COE	44	33.3	67.0%	44.7
0060	Ed Ctr	202	COE	28	16.0	103.0%	26.7
0060	Ed Ctr	225	COE	47	25.0	54.0%	33.3
0060	Ed Ctr	226	COE	30	18.6	113.0%	28.5
0060	Ed Ctr	227	COE	45	24.2	79.0%	33.3
0060	Ed Ctr	229	COE	35	15.5	66.0%	26.5
0060	Ed Ctr	249	COE	30	14.8	81.0%	25.7

Bldg_Num	Bldg_Name	Room	College	Capacity	WRH_Day	SO%	WRH_All
0060	Ed Ctr	4	COE	70	24.5	57.0%	35.4
0060	Ed Ctr	5	COE	70	15.5	56.0%	26.2
0063	Educ-Anx	113	COE	23	1.0	83.0%	2.7
0063	Educ-Anx	120	COE	14	0.0	0.0%	5.6
0063	Educ-Anx	167	NURS	40	9.0	72.0%	15.0