

A Demographic and Utilization Study for the

# Campus Master Plan Update

at **Sam Houston State University**

November 2012



**Prepared by Facility Programming and Consulting**



<b>Chapter</b>	<b>Page</b>
Preface .....	1.1
Demographics.....	2.1
<i>Introduction</i> .....	2.1
<i>Methodology</i> .....	2.2
<i>Enrollment Study</i> .....	2.4
<i>Projected Growth</i> .....	2.4
<i>Enrollment by Ethnicity</i> .....	2.5
<i>Enrollment by Gender</i> .....	2.6
<i>Enrollment Scenarios</i> .....	2.7
<i>Five Scenarios</i> .....	2.7
<i>Enrollment Projections</i> .....	2.9
<i>Distance Learning</i> .....	2.10
<i>Alternative Growth Scenarios</i> .....	2.13
<i>Growth Optimization</i> .....	2.15
<i>Demographic Conclusions</i> .....	2.16
Existing Space and Utilization.....	3.1
<i>Overview</i> .....	3.1
<i>Space Utilization Analysis</i> .....	3.10
<i>Classroom Utilization</i> .....	3.15
<i>Classroom Demand Analysis</i> .....	3.27
<i>Laboratory Utilization</i> .....	3.29



**Preface**

**1**





ONE IMPORTANT ELEMENT NEEDED to create a master plan is to clearly define and project the enrollment pressures the university will face and compare that demand against the capacity of the existing campus.

## Understanding the Demographics

The university serves a diverse population and a wide geographic area. To be successful, the master plan should be informed by where your students are coming from, which campus they attend (main or satellite), and which students are being served at more than one campus. What is the demographic profile of the students? What percentage are traditional vs. non-traditional? How are hybrid and/or distance learning courses being used? How many students come from outside your immediate geographic area? Then overlay this data with projections for growth, changes in population, and other factors that influence enrollment

The capture rate is the ratio of how many potential students you can turn into enrolled students for the university. The pool of potential students is usually defined as the age cohort between 18 and 65 years. Future enrollment projections are a function of population and capture rate.

## Utilization Analysis

Every university has an inventory of classrooms and laboratories it uses to teach classes. But most do not understand how those assets are being used. Understanding the available capacity of current classrooms and labs is a fundamental starting point for moving forward with the master plan.

This step is the precursor to developing the master plan. The projected need for future space, by type of space, is balanced against the current capacity. Demand will be translated into a series of projects, both future new buildings as well as major renovations or re-purposing of older buildings.





**Demographics**

2



- T**HE SECTION WILL COVER the following subjects:
- Introduction to Demographics
  - Enrollment Study
  - Enrollment Projections

### **Introduction to Demographics**

In order to plan for the future, the trends in enrollment and projected population growth need to be understood and analyzed. The demographics of the surrounding communities must also be understood and can offer valuable insight regarding population projections, capture rates, utilization, and enrollment projections. A demographic study was conducted as part of the Master Plan Study and encompassed Sam Houston State’s historic trends from 2002 to 2011 and included projections through 2025. The data was analyzed and used to establish the foundation for “building blocks” that will aid the university in assessing current conditions and realizing future expansion.

Enrollment trends and projections are a vital piece of information integral to any campus development plan. By analyzing this data, a campus development plan can begin to address the needs of the current population and plan for future utilization. In order to analyze enrollment, historical data must be collected. A thorough review must be conducted of past trends and new department initiatives and planned programs.

## Demographics

### Methodology - Demographics and Projections

The methodology employed in order to develop enrollment projections for Sam Houston State University included several steps. The issues addressed during the development of a projection methodology help define the way the development plan evolves.

Typical methodology utilized for enrollment projections includes:

- Regression model
- Enrollment history
- Population projections
- Age/race participation rates for five years
- Multiple forecasts

In this study, five scenarios were developed based on the following:

- Enrollment Historical Trends per least squares best fit based on 2007-2011
- Capture Rate Trends per least squares best fit based on 2007-2011
- Optimized Capture Rate based on optimizing the capture rate in primary and secondary counties
  - Primary Counties: Walker, Montgomery and Harris counties based on students by residence
  - Secondary Counties: Grimes, San Jacinto, Liberty and Waller counties based on students by residence
- SHSU internal Strategic Enrollment Management (SEM) Committee goals
- The Texas Higher Education Coordinating Board (THECB) projection model

In addition to the scenarios presented above, an alternative analysis is presented that is based on targeting the service area of the Lone Star College System.

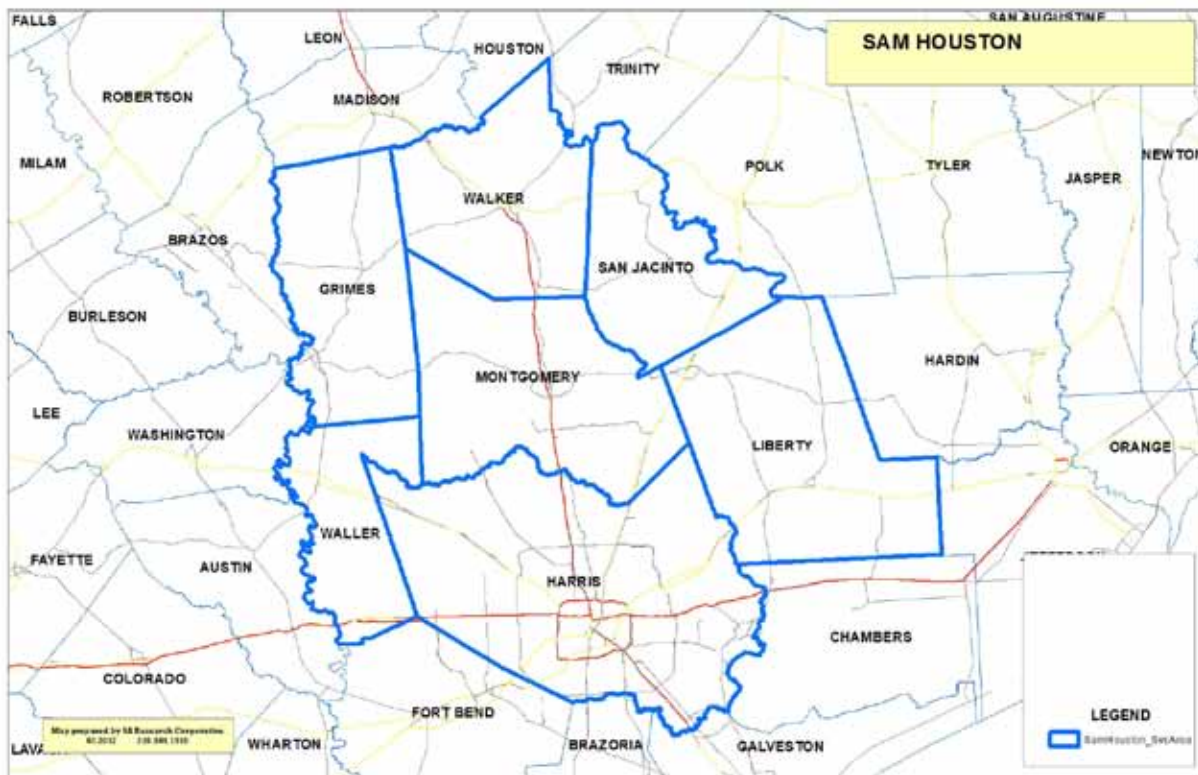
The enrollment projections were compiled using various sources which included:

- Data received from Sam Houston State's SEM Committee
- Data from Environmental Systems Research Institute Business Information Solutions (ESRI BIS) used to enhance the population projections with specific information and the most current data
- Determination of the Sam Houston State University capture rates (percentage of population that attends Sam Houston State

University campuses)

- Development of the likely scenarios for overall Sam Houston State University enrollment to 2025
- Use of the Texas Higher Education Coordinating Board (THECB) projection (projections to 2020) as a model (The THECB uses an assumed constant capture rate for enrollment projections)
- Discussion of how campus enrollment projections and capture rates might be impacted based on newly planned programs and initiatives
- Inclusion of Distance Learning headcounts
- Texas State Data Center (TSDC), county population projections by age and ethnicity to 2040
- Independent Analysis and Projections

*Sam Houston State University Seven Primary and Secondary Feeder Counties*

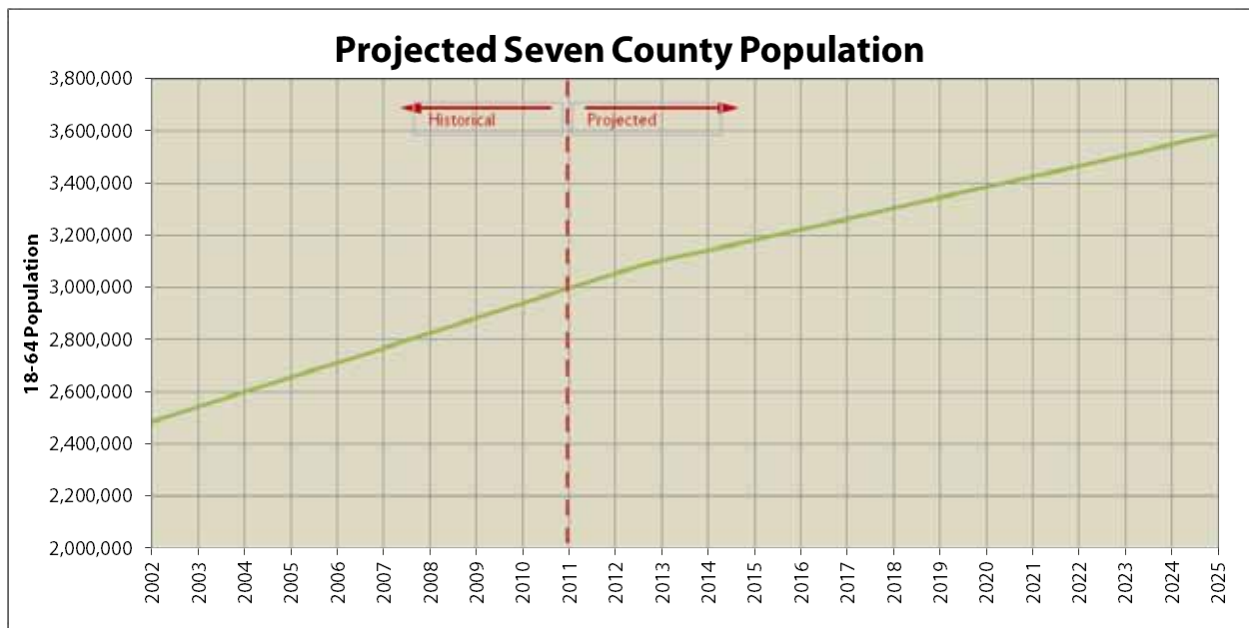


### Enrollment Study

#### Projected Growth by Seven County Region

The following chart illustrates the projected growth in the primary and secondary counties which is forecasted to occur. The average annual growth from the seven county area has been 1.8% between the years 2002-2011. The seven county region is forecasted to grow 1.3% annually between 2012 and 2025.

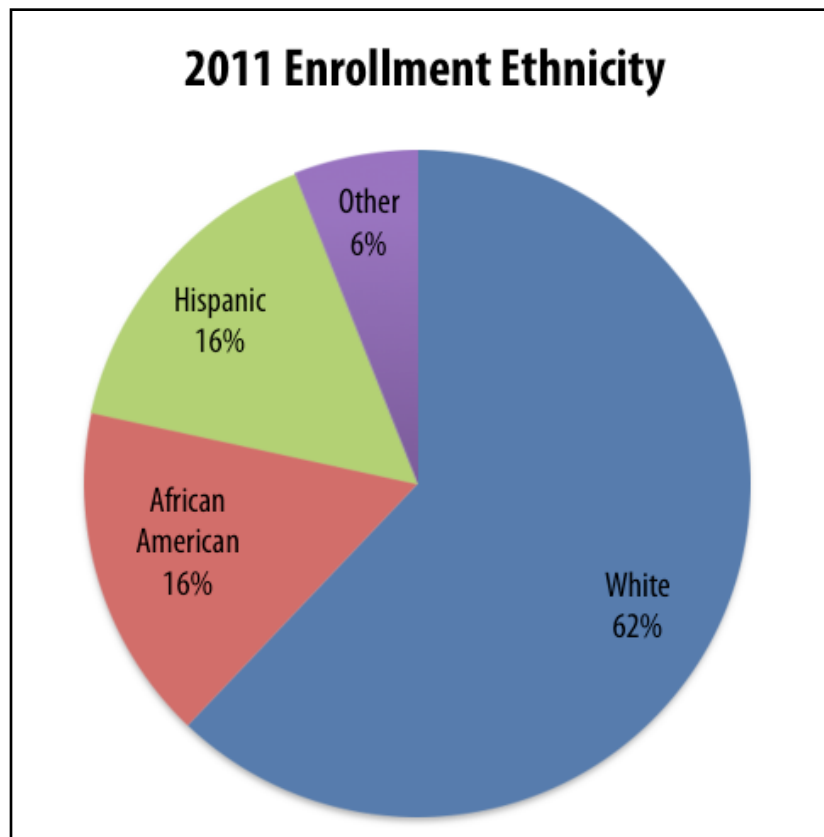
The rate of change in population growth is slowing over the next decade as compared to the last.



KEY	DESCRIPTION	2011	2015	2020	2025
—	TOTAL SEVEN COUNTIES	2,998,302	3,184,497 (6%)	3,386,342 (6%)	3,589,203 (6%)

### Enrollment by Ethnicity

Currently, more than half of the student population of Sam Houston State University is white, 16% African-American, and 16% Hispanic. In the period between 2007 and 2011, only the white population has fallen. All other categories have been increasing, creating an increasingly diverse student population.



Percentage Increase/Decrease Fall 2007 to Fall 2011	
African American	21.70%
Hispanic	26.14%
Other	47.28%
White	-6.09%

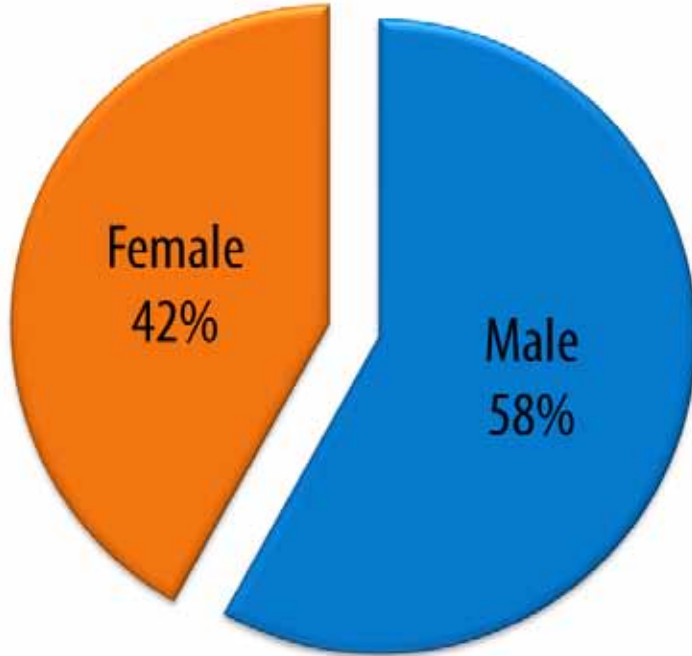
# Master Plan Study

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## Demographics

### Enrollment by Gender

Currently, enrollment at Sam Houston State University is 42% female and 58% male. Over the five year period ending in the Fall of 2011, female enrollment has grown more rapidly than male enrollment.



Percentage Increase From Fall 2007 to Fall 2011	
Male	5.7%
Female	8.0%



## Enrollment Scenarios

### Five Scenarios

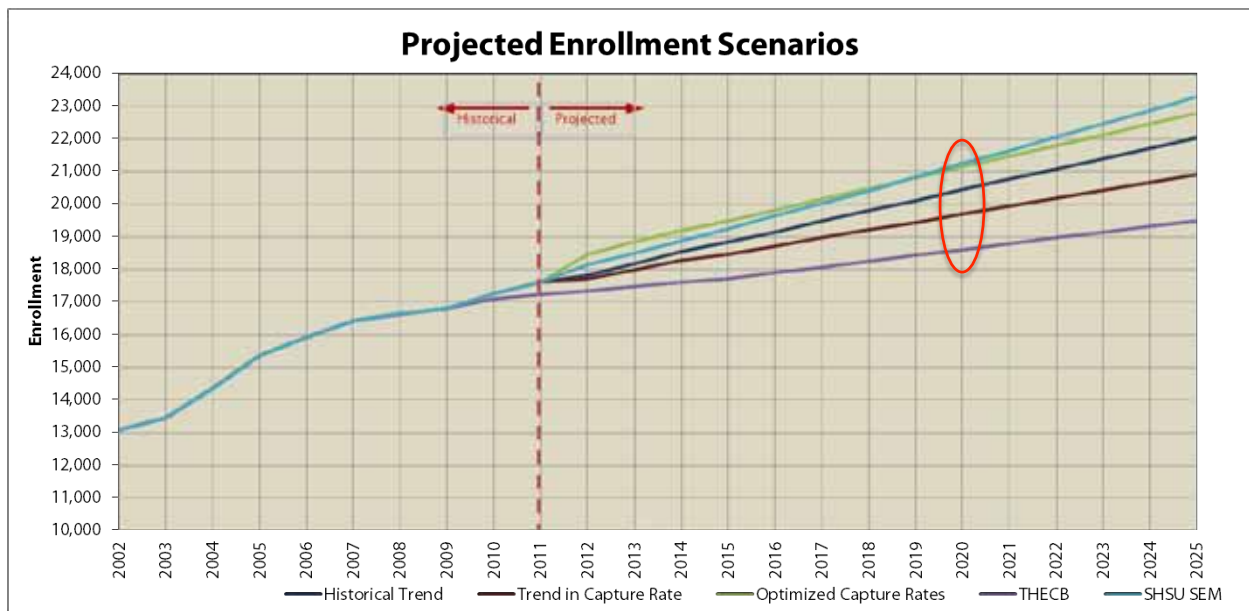
Five Scenarios are presented for overall enrollment:

- Historical Enrollment Trend
- Historical Capture Rate Trend
  - Three primary counties have historically provided at least 75% of the enrollment at SHSU – Harris, Montgomery, and Walker.
  - Total enrollment has effectively been drawn from these three plus four other counties – Grimes, Liberty, San Jacinto, and Waller.
  - Capture rates were developed in the primary three counties and the seven counties based on the 18-64 population in those counties.
    - Primary County CR has remained stable over last five years at .59%.
    - Seven County CR has remained stable over the last five years at .57%.
- Optimized Capture Rate Trend
  - Assumed that all seven counties can be “penetrated” at the same trend as the primary counties and targets .61% as a capture rate.
- SHSU internal SEM goals
  - CR moves from .59%/.57% to .63%/.61%.
- THECB

# Master Plan Study

## Demographics

Student enrollment is expected to exceed 21,000 by 2020 through optimizing capture rates and meeting the SHSU SEM Committee goals. THECB has developed their own enrollment projections for Sam Houston State University which are viewed as conservative for the purposes of this planning exercise.



KEY	DESCRIPTION	2011	2015	2020	2025
	Historical Trend	17,617	18,837 (7%)	20,450 (9%)	22,050 (8%)
	Trend in Capture Rate	17,617	18,488 (5%)	19,701 (7%)	20,912 (6%)
	Optimized Capture Rates	17,617	19,502 (11%)	21,151 (8%)	22,786 (8%)
	THECB	17,234	17,731 (3%)	18,617 (5%)	19,503 (5%)
	SHSU SEM	17,617	19,258 (9%)	21,262 (10%)	23,293 (10%)

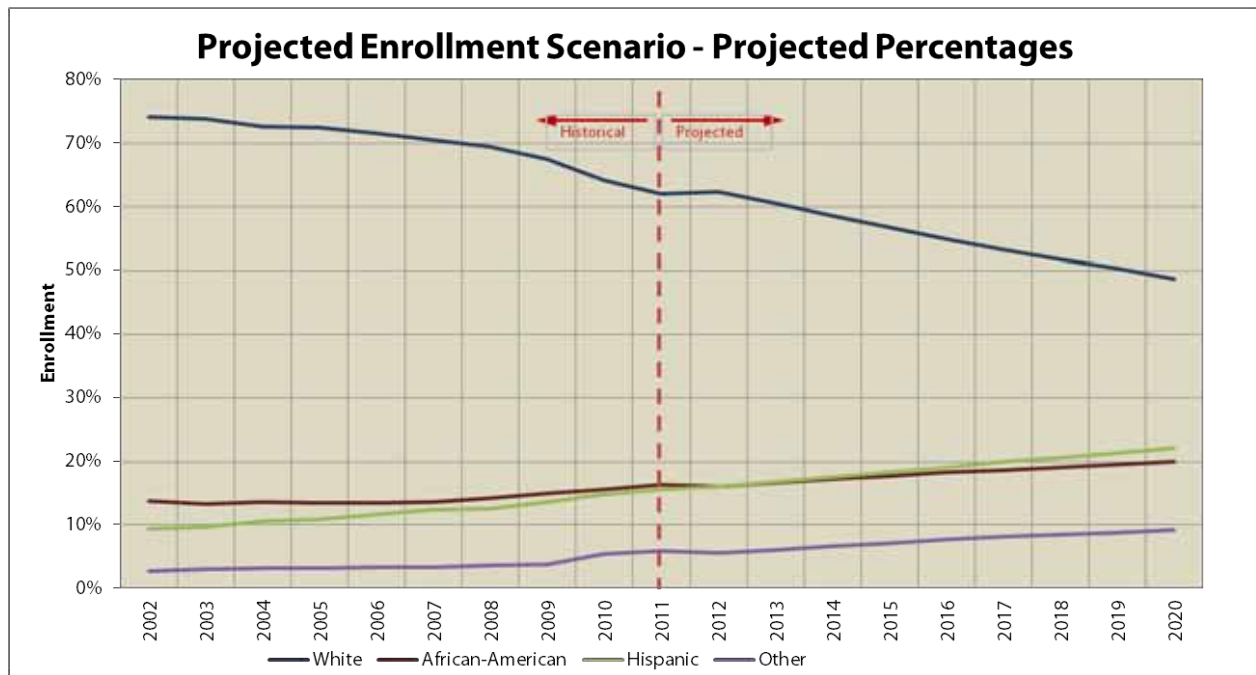
### Enrollment Projections

- Area population continues to grow but at a declining rate of change
- Enrollment Scenarios (by 2020)
  - Trend in Capture Rate 19,700
  - Optimized Capture Rate 21,200
  - SHSU SEM 21,262

The two capture rate based scenarios suggest demographic factors will provide growth to between 20,000 and 21,000. Aggressive promotion, such as outlined in the SEM report, suggest enrollment of 22,000 by 2020 is achievable but not a demographic gift.

### Projected Ethnic Enrollment

The following graph illustrates that by 2020 the white student population will decline to approximately half of the total student population. African-American, hispanic and other (largely Asian) are projected to grow more rapidly.



KEY	ETHNICITY	2011	2015	2020
—	White	62%	57%	49%
—	African-American	16%	18%	20%
—	Hispanic	16%	18%	22%
—	Other	6%	7%	9%

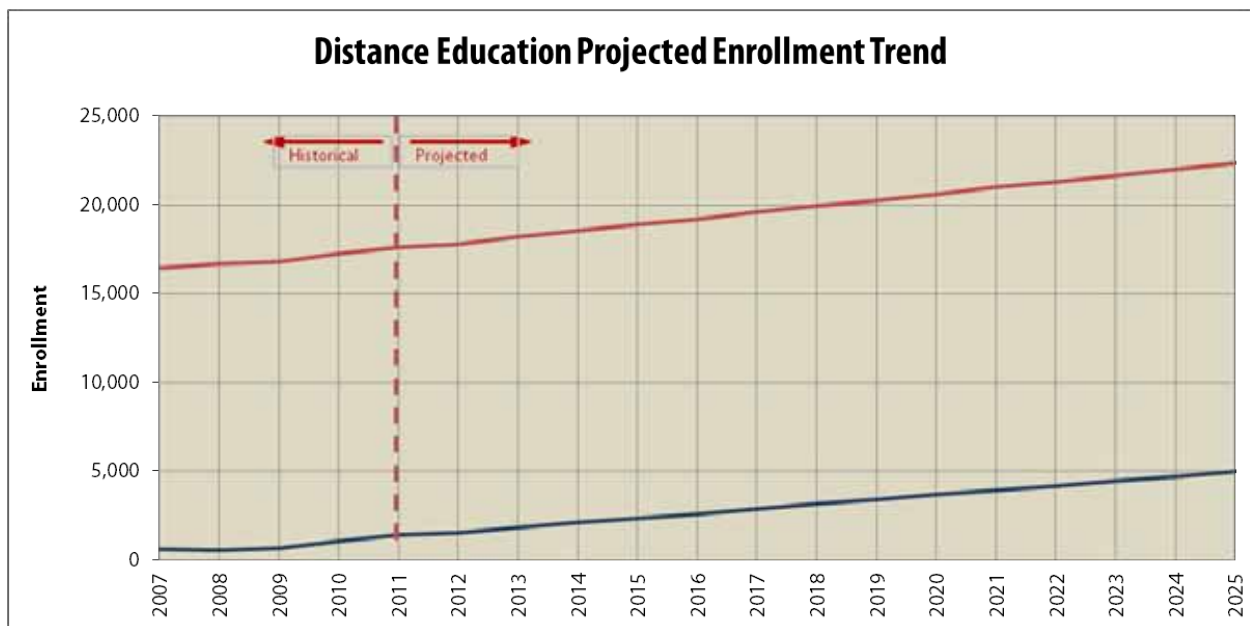
# Master Plan Study

## Demographics

### Distance Learning

Sam Houston State University has successfully implemented numerous innovative distance education programs including 16 master's degrees and a doctorate in Developmental Education Administration.

Online learning continues to be popular choice for others pursuing higher learning, including professionals and military service members. As such, distance education has contributed to the overall enrollment growth of the university in the past few years. Sam Houston State University currently has a growing population of Distance Learning Students. Distance Learning Students who are enrolled at Sam Houston State University but never actually attend the campus were considered in the analysis as future campus growth is primarily driven by traditional on-campus students who are the primary users of campus facilities. The graph below illustrates enrollment growth from 2007 to 2011 with Distance Learning Students identified separately.

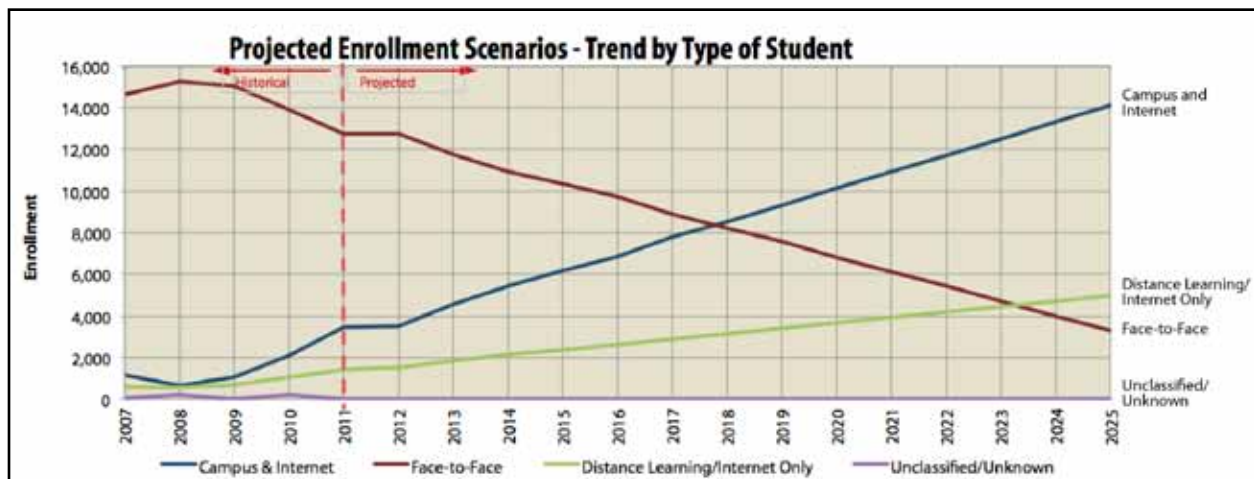


KEY	DESCRIPTION	2011	2015	2020	2025
	DE	1,413	2,361 (67%)	3,675 (56%)	4,978 (35%)
	All Enrollment	17,617	18,898 (7%)	20,626 (9%)	22,371 (8%)

	2011	2015	2020	2025
DE as % of All Enrollment	8%	12%	18%	22%

### Distance Learning Projection Scenarios

The following graph illustrates trends in students who are enrolled both in-person and distance learning, face-to-face only and distance learning only. The data show the number of traditional face-to-face only students will decrease as students chose distance learning only and “swirling”—combining campus and distance learning—as their primary enrollment options.

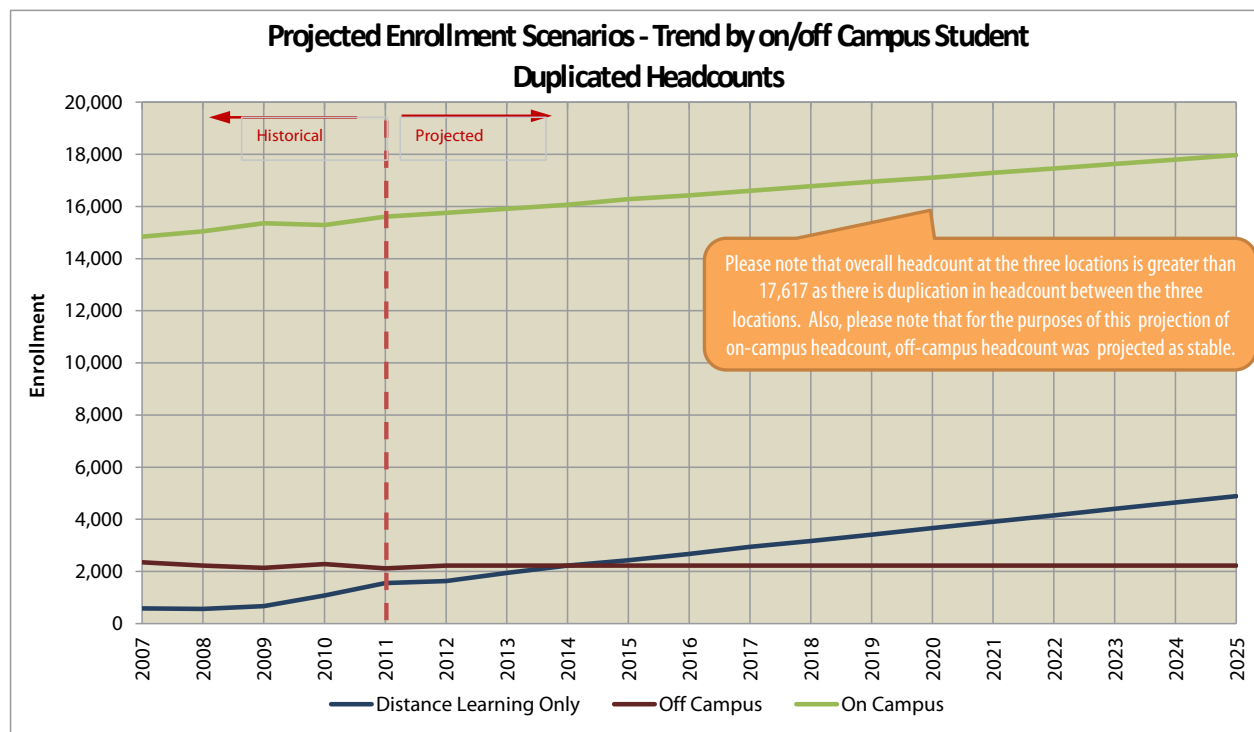


KEY	DESCRIPTION	2011	2015	2020	2025
	Campus & Internet	3,458	6,180 (79%)	10,130 (64%)	14,094 (39%)
	Face-to-Face	12,736	10,358 (-19%)	6,822 (-34%)	3,300 (-52%)
	Distance Learning/Internet Only	1,413	2,361 (67%)	3,675 (56%)	4,978 (35%)
	Unclassified/Unknown	10	0	0	0

# Master Plan Study

## Demographics

The following graph illustrates the trend for on and off campus student enrollment. Duplicated head counts and students in more than one category increase the total above the unduplicated enrollment.



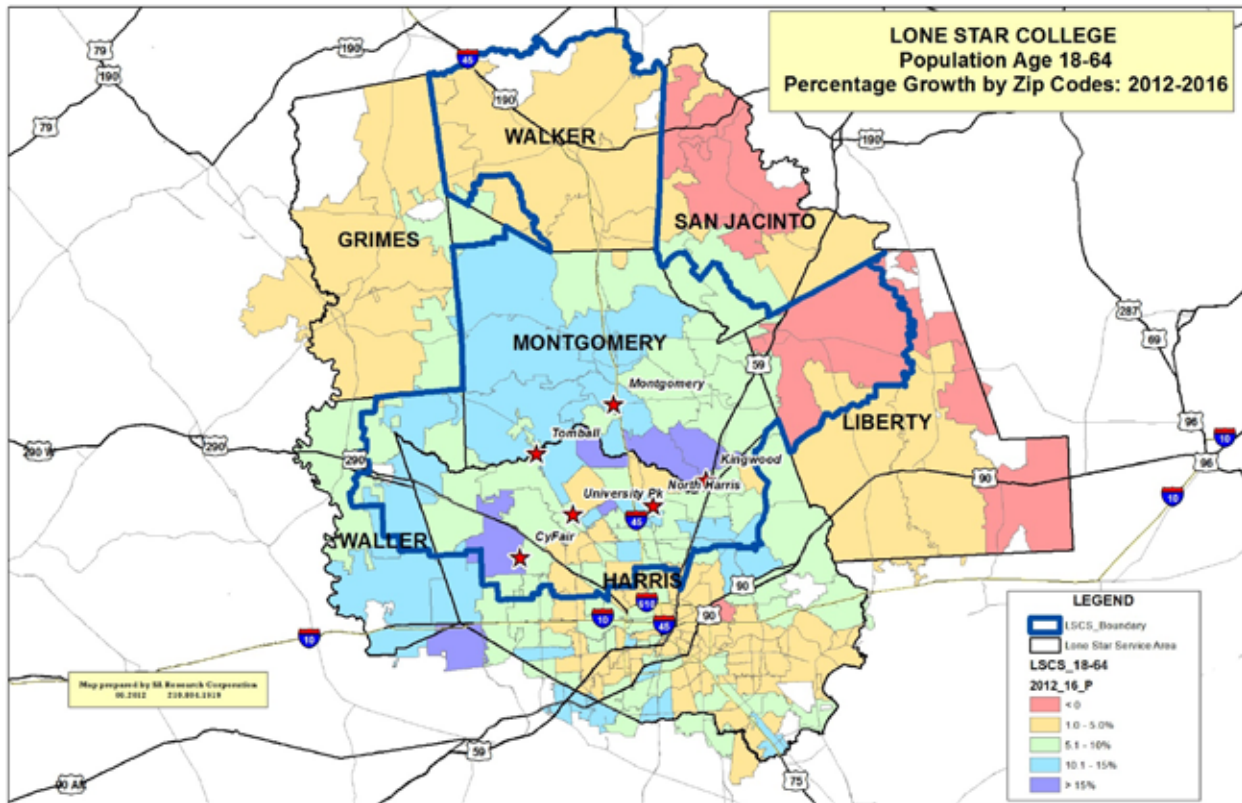
DESCRIPTION	2011	2015	2020	2025
Distance Learning Only	1,558	2,425 (56%)	3,664 (51%)	4,886 (33%)
Off Campus	2,116	2,222 (5%)	2,222 (0%)	2,222 (0%)
On Campus	15,608	16,285 (4%)	17,110 (5%)	17,972 (5%)
<b>TOTAL</b>	<b>19,282</b>	<b>20,932 (9%)</b>	<b>22,996 (10%)</b>	<b>25,080 (9%)</b>

DESCRIPTION	2011	2015	2020	2025
On-Campus	81%	78%	74%	72%
Distance Only	8%	12%	16%	19%
Off-Campus	11%	11%	10%	9%

### Alternative Growth Scenarios

Another option for growth is target the service area of the Lone Star College System.

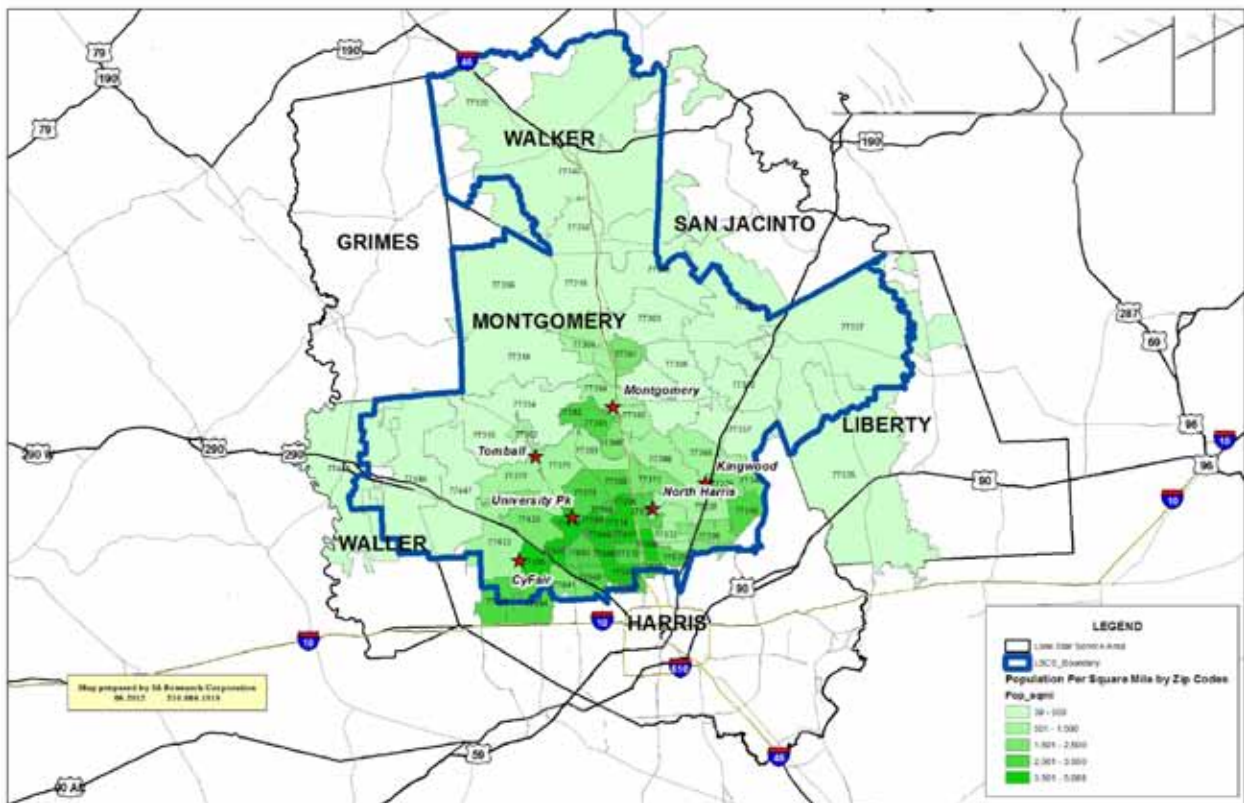
*Sam Houston State University Percentage of Current Growth Map by Zip Code*



# Master Plan Study

## Demographics

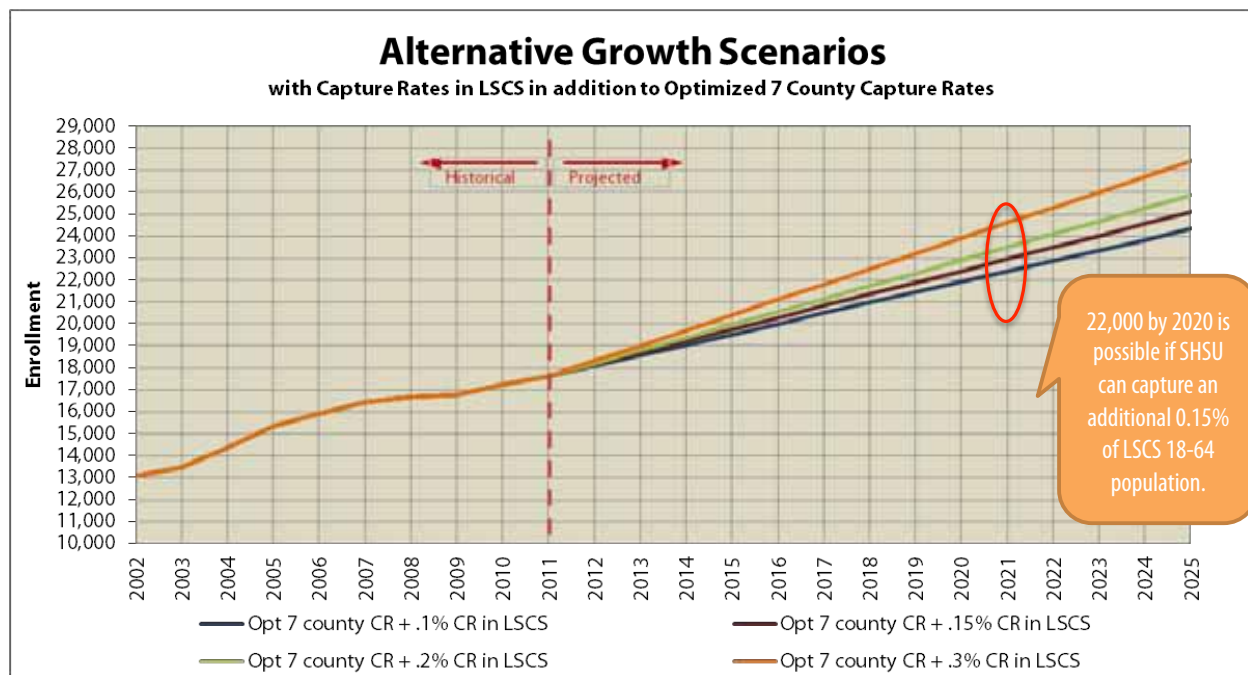
*Sam Houston State University Enrollment Map  
by Zip Code Illustrating Lone Star College System  
Capture Area*





### Growth Optimization

The following scenarios reflect a strategy to aggressively target new students from the Lone Star College System region. Potential enrollment reaches 22,000 students with only a .1% increase in the capture rate from the seven county LSCS feeder area.



KEY	DESCRIPTION	2011	2015	2020	2025
	Opt 7 county CR + .1% CR in LSCS	17,617	19,533 (11%)	21,929 (12%)	24,324 (11%)
	Opt 7 county CR + .15% CR in LSCS	17,617	19,753 (12%)	22,423 (14%)	25,093 (12%)
	Opt 7 county CR + .2% CR in LSCS	17,617	19,973 (13%)	22,917 (15%)	25,862 (13%)
	Opt 7 county CR + .3% CR in LSCS	17,617	20,412 (16%)	23,906 (17%)	27,399 (15%)

### Conclusions

- What is the future enrollment projected to be? Is 22,000 by 2020 a possibility?
  - Relying on population growth in the current service area only - enrollment is projected to be 19,700.
  - Optimizing capture rates or increasing penetration of LSC service area results in enrollment scenarios from 21,200 to 23,900.
  - 22,000 by 2020 requires outperforming the underlying demographic growth by 11.7%
- What is the role of Distance Learning?
  - If DL continues its current trend, it will be approximately 18% of overall enrollment. This would equate to 3,960 DL only student for the 22,000 by 2020 target.
  - Students will increasingly “swirl” – use both face-to-face and DE at the same time.
- What is the role of off-campus enrollment?
  - With the 22,000 by 2020 target, the duplicated headcount of on-campus students will increase from 15,600 to 17,100.
  - Future growth will be disproportionately carried via DE and off-campus growth.
- What is the Enrollment ethnicity projected to be?
  - % of white students will continue to decrease, becoming approximately half by 2020.
  - % of African-American students will increase.
  - % of Hispanic students will increase 38%.
  - % of Other students will increase 50%.

## Existing Space and Utilization

3



**T**HE SECTION WILL COVER the following subjects:

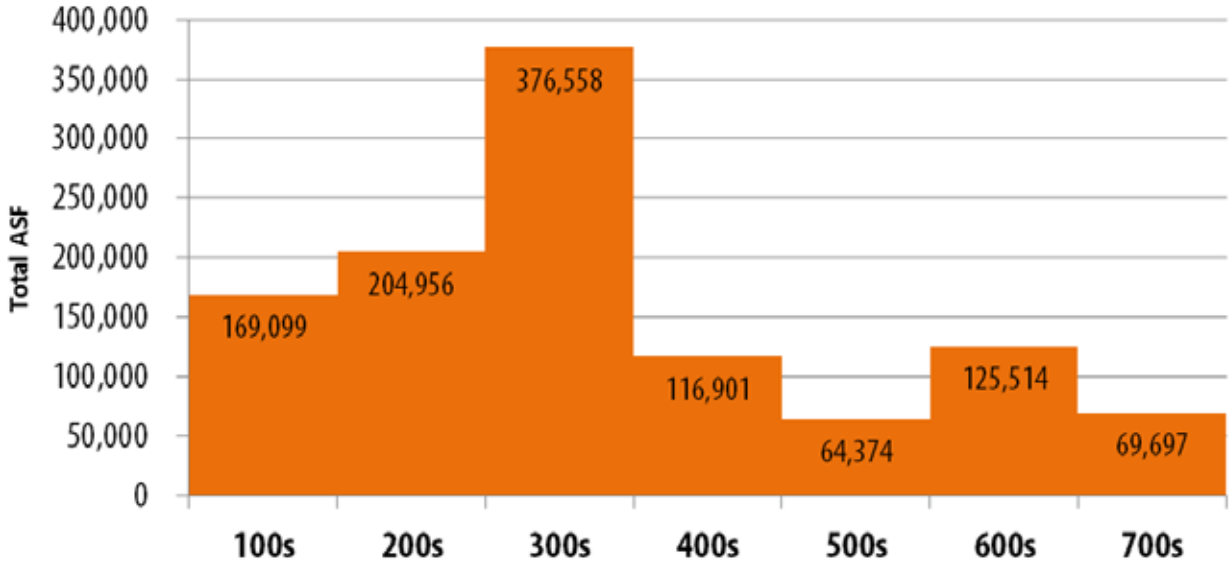
- Existing Distribution of Spaces
- Benchmarking - Space Sizes and Types, SF/Student
- Existing Space Utilization
  - Overview
  - Classrooms
  - Laboratories

## Overview

The space analyzed as part of this study examined the academic campus space. In most cases, the current space needs are represented in assignable square feet (ASF) which describes the amount of space between walls. Assignable square feet does not include corridors, restrooms, and other building support spaces or structural elements like walls and columns. This is in contrast to gross square feet (GSF) which encompasses the total enclosed area of a building. An efficiency factor of 65% was used to convert from ASF to GSF in this study.

Before planning new facilities it is important to understand how effectively existing academic space is being utilized. In this section overall utilization data are presented for planning purposes and specific areas of under-utilization are presented to provide tools for the University to improve the performance of existing space.

### Overview of Current E&G Space

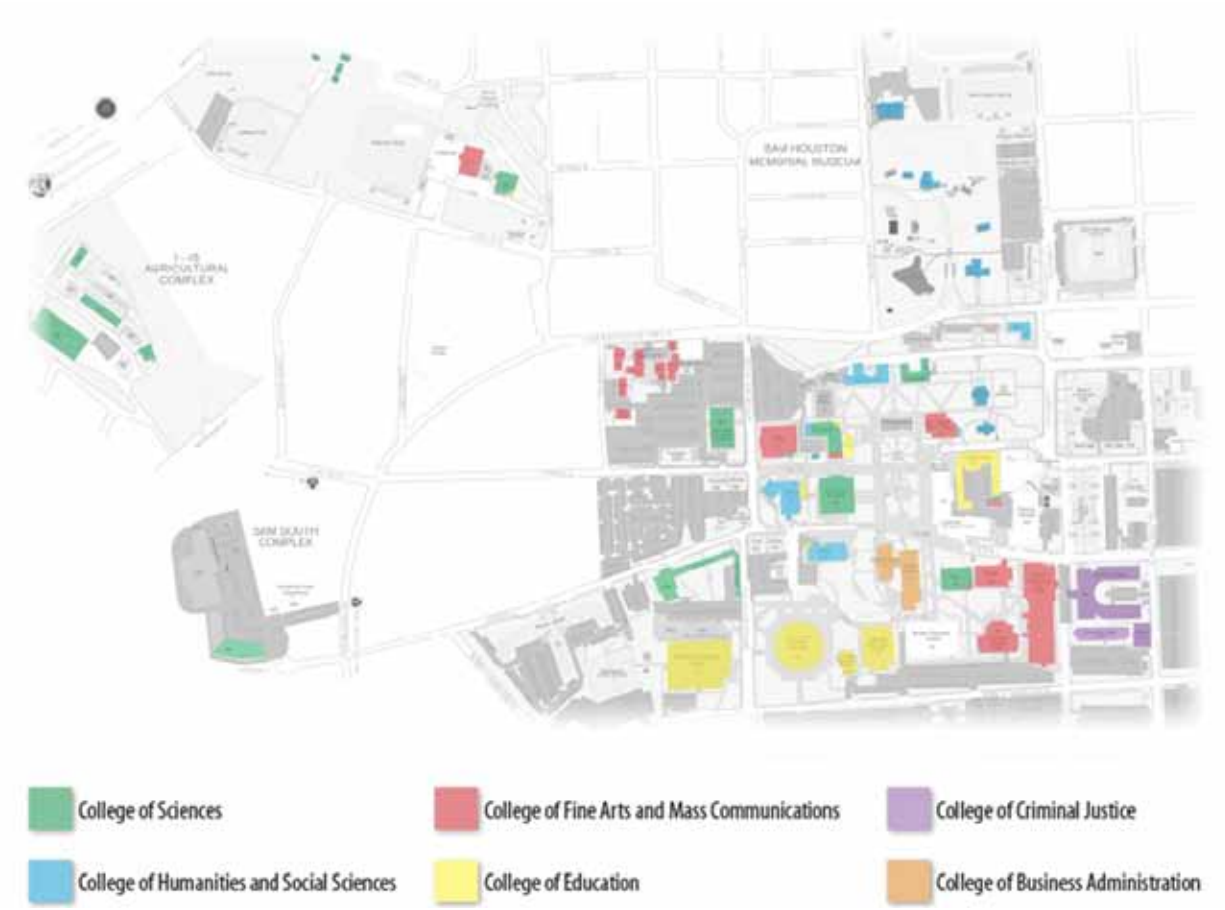


The current inventory indicates nearly 170,000 ASF of classrooms and over 204,000 ASF of labs.

Space Code	Use
100s	Classrooms
200s	Labs
300s	Offices
400s	Study
500s	Special Use
600s	General Use
700s	Support

# Master Plan Study

## Existing Space and Utilization



# Master Plan Study

## Existing Space and Utilization

Colleges	100s	200s	300s	400s	500s	600s	700s	800s	Total No. of Rooms
College of Business Administration	-	11	133	-	-	2	-	-	146
College of Criminal Justice	-	-	223	-	81	25	-	-	329
College of Education	-	69	296	2	49	21	1	-	438
College of Fine Arts & Mass Communication	-	106	170	2	25	94	4	-	401
College of Humanities & Social Sciences	-	37	380	1	7	115	-	-	540
College of Sciences	-	188	297	1	22	4	3	-	515

Colleges	100s	200s	300s	400s	500s	600s	700s	800s	Total ASF
College of Business Administration	-	6202	21030	-	-	360	-	-	27,592
College of Criminal Justice	-	-	41,897	-	16,069	22,562	-	-	80,528
College of Education	-	15560	57122	522	66497	4056	828	-	144,585
College of Fine Arts & Mass Communication	-	56,113	32,076	402	11,949	58,655	7,112	-	166,307
College of Humanities & Social Sciences	-	13,385	67,281	1,263	3,243	42,295	-	-	127,467
College of Sciences	-	111291	52897	315	13371	1739	1366	-	180,979



## College of Business Administration

Building	Total ASF
SMITH HUTSON BUSINESS BLDG	27,474
<b>Total</b>	<b>27,474</b>

## College of Criminal Justice

Building	Total ASF
BANK OF AMERICA BLDG-LEASE SPACE	1,932
BILL BLACKWOOD LEMIT	15,659
GEORGE J. BETO CRIMINAL JUSTICE CTR	53,802
SMITH-KIRKLEY HALL	4,324
UNIVERSITY HOTEL	4,811
<b>Total</b>	<b>80,528</b>

## College of Education

Building	Total ASF
ACADEMIC BUILDING III	1,821
ACADEMIC BUILDING IV	3,250
ARCHERY 1 - IM FLD 1	135
BERNARD G JOHNSON COLISEUM	572
COLLEGE OF HUMANITIES & SOCIAL SCIE	2,318
COUNSELOR EDUCATION CENTER	4,049
DAN RATHER COMMUNICATIONS BUILDING	1,020
ELEANOR & CHARLES GARRETT TEACHER E	27,833
FARRINGTON BUILDING	1,885
GAERTNER PAC	2,068
GIBBS CONFERENCE CENTER	211
HEALTH & KINESIOLOGY CENTER	63,920
INDUSTRIAL TECH.	7,596
LEE DRAIN BUILDING	3,009
MUSIC BUILDING	19,391
SMITH-KIRKLEY HALL	5,507
<b>Total</b>	<b>144,585</b>

## College of Fine Arts and Mass Communication

Building	Total ASF
ACADEMIC BUILDING I	586
ACADEMIC BUILDING III	12,721
ACADEMIC BUILDING IV	508
ART BUILDING A	5,947
ART BUILDING B	2,316
ART BUILDING C	4,259
ART BUILDING D	5,076
ART BUILDING E	1,463
ART BUILDING F	2,846
ART BUILDING G	1,646
DAN RATHER COMMUNICATIONS BUILDING	13,990
FARRINGTON BUILDING	1,554
GAERTNER PAC	67,343
MUSIC BUILDING	6,492
SMITH-KIRKLEY HALL	4,651
UNIVERSITY STORAGE FACILITY	7,112
UNIVERSITY THEATRE CENTER	25,350
WORKSHOP IN ART STUDIO & HISTORY	2,447
<b>Total</b>	<b>166,307</b>

## College of Humanities and Social Sciences

Building	Total ASF
ACADEMIC BUILDING III	554
ACADEMIC BUILDING IV	13,178
AUSTIN HALL	5,894
COLLEGE OF HUMANITIES & SOCIAL SCIE	31,925
DAN RATHER COMMUNICATIONS BUILDING	2,215
EVANS COMPLEX	19,189
FARRINGTON BUILDING	5,210
KATY & E. DON WALKER, JR. ED. CTR.	13,048
LEE DRAIN BUILDING	177
MARGARET LEA HOUSTON	6,710
MUSEUM BEAR BEND	1,358
MUSEUM BLACKSMITH SHOP (MONTGOMERY)	171
MUSEUM CRANE FAMILY CABIN	423
MUSEUM DEMONSTRATION CABIN	48
MUSEUM ELIZA S KITCHEN	280

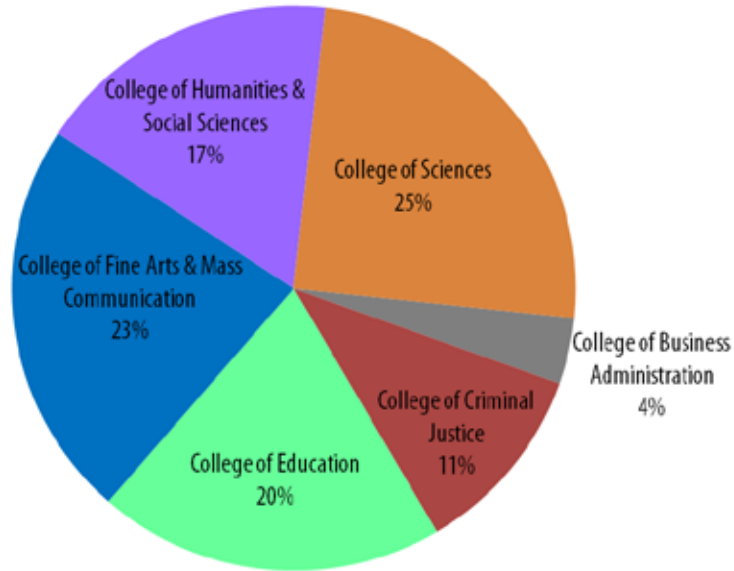
MUSEUM EXHIBIT HALL	3,274
MUSEUM FORT SAM HOUSTON	125
MUSEUM GAS SHED	84
MUSEUM GUERRANT FAMILY CABIN	585
MUSEUM HULON HOUSE	1,451
MUSEUM JAMES JORDAN (JARDINE) LOG H	650
MUSEUM JOSHUA S BLACKSMITH FORGE	472
MUSEUM RAVEN NEST	168
MUSEUM SAM HOUSTON MEMORIAL MUSEUM	8,512
MUSEUM STAGE BUILDING	172
MUSEUM STEAMBOAT HOUSE	1,700
MUSEUM WOODLAND HOME	2,020
PEABODY MEMORIAL LIBRARY	3,131
PSYCHOLOGICAL SERVICES CENTER	4,559
SCIENCE ANIMAL LAB	184
<b>Total</b>	<b>127,467</b>

### College of Sciences

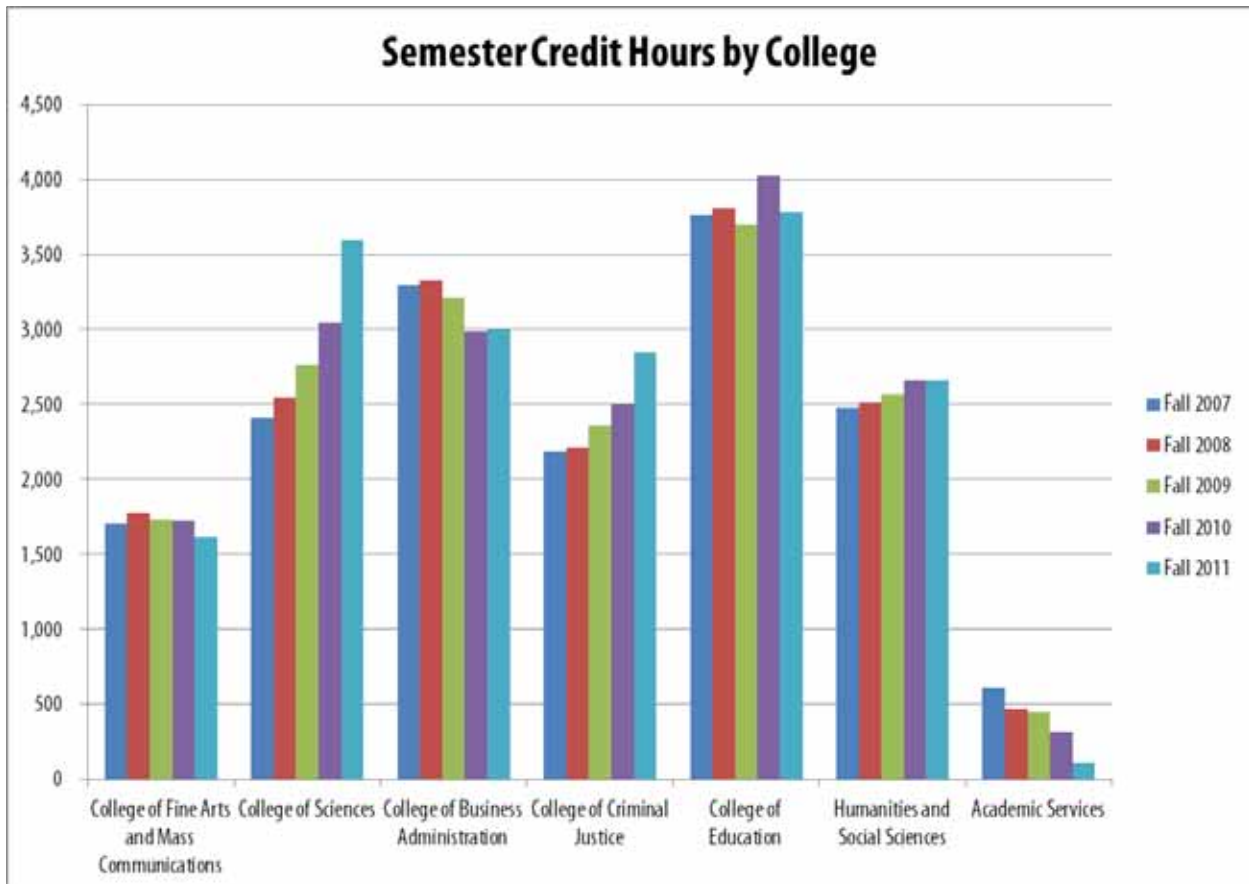
Building	Total ASF
ABATTOIR BUILDING	570
ACADEMIC BUILDING I	9,131
ACADEMIC BUILDING III	9,351
AG AND IND SCIENCE RESEARCH LAB	770
AG GREENHOUSE NO 1	1,719
AG GREENHOUSE NO 2	1,661
AGR. 145 GREENHOUSE	2,469
AGRICULTURAL ENGINEERING TECH ANNEX	1,421
ANIMAL HUSBANDRY BLDG	992
BIOLOGY FIELD STATION STORAGE BLDG	1,911
CHEMISTRY AND FORENSIC SCIENCE	28,818
ENERGETIC MATERIAL RESEARCH FACILIT	2,091
FARRINGTON BUILDING	20,174
FISH HATCHERY FIELD STAT RESIDENCE	1,061
FISH HATCHERY FIELD STAT WORKSHOP	599
FISH HATCHERY FIELD STATION GARAGE	1,001
FISH HATCHERY GREENHOUSE	1,363
FISH HATCHERY GREENHOUSE #2	1,440
GIBBS CLASSROOM	187
GIBBS EQUIPMENT STORAGE WIRE ROAD	767
GIBBS RED BARN AG DEM LAB	1,151

GIBBS RODEO ARENA FEED STORAGE	1,165
GIBBS RODEO ARENA STORAGE BUILDING	199
GIBBS SHEEP AND GOAT BARN	888
HORTICULTURE CLASSROOM	848
HORTICULTURE LAB	800
JOHN W THOMASON BUILDING	6,983
LEE DRAIN BUILDING	48,655
OBSERVATORY #2	71
OBSERVATORY #3	71
OBSERVATORY #4	41
OBSERVATORY CLASSROOM	652
OBSERVATORY TELESCOPE	522
REGIONAL CRIME LAB THE WOODLANDS	3,295
SCIENCE ANIMAL LAB	744
SMITH-KIRKLEY HALL	376
SOUTH TEXAS APPLIED FORENSIC SCIENC	1,651
SS 3 - ADMINISTRATIVE OFFICES	9,907
TRACTOR LAB	4,661
WHITE HALL	1,217
WILLIAM R. HARRELL AGRICULTURAL ENG	9,586
<b>Total</b>	<b>180,979</b>

**Division of Academic ASF by College**



**Semester Credit Hours by College**



### Space Utilization Analysis

Utilization measures the current use of existing facilities, benchmarked against standards that are informed by THECB guidelines. A thorough understanding of the university's space utilization serves as an analytical tool to determine space requirements and measure the viability of existing or proposed alternatives. The process also assists in identifying where deficiencies exist in scheduling practices or where facility shortages occur. The intent of the analysis is to survey the efficiency of existing space.

Determining efficiency is accomplished by exploring usage trends and evaluating patterns by multiple factors. The factors which are considered are scheduling, occupancies, and space functionality. The current inventory of space was reviewed alongside the Fall 2011 class schedule to determine the weekly usage of classrooms and lab. Utilization was determined for Fall 2011 classes and lab. There are currently classrooms and laboratories in 40 buildings across the Sam Houston State University Campus.

Current space was analyzed and a utilization study was undertaken for classrooms and lab spaces. For utilization benchmarks, the Texas Higher Education Coordinating Board (THECB) guidelines on classroom and laboratory utilization were consulted. Currently, Sam Houston State University has an overall SUE (Space Usage and Efficiency) score of 158 which relates to a Classroom Score of 66 and a Class Lab Score of 92. This indicates that, as defined by the THECB SUE guidelines, in aggregate there is currently sufficient classroom and lab space to accommodate demand. However, as shown later in the section, this aggregate measure does not mean all specific instructional requirements are met, optimized or appropriate to support instructional requirements.

Texas Higher Education Coordinating Board - Space Usage Efficiency (SUE) - Fall 2011

Institution	Overall Score	Classroom Score	Class Lab Score	Classroom					Class Laboratory						
				Demand	Weighted Score	Utilization	Weighted Score	Average Percent Fill	Weighted Score	Demand	Weighted Score	Utilization	Weighted Score	Average Percent Fill	Weighted Score
UT-Arlington	133	58	75	33	18	28	8	73%	32	30	27	22	24	65%	24
UT-Austin	159	75	84	40	22	37	24	56%	24	40	36	32	32	59%	16
UT-Dallas	200	100	100	49	36	40	32	67%	32	41	36	32	32	77%	32
UT-El Paso	175	75	100	44	27	38	24	83%	24	66	36	30	32	86%	32
UT-Pan American	209	100	100	46	36	38	32	73%	32	41	36	28	32	84%	32
UT-Brownsville	176	92	84	66	36	34	24	76%	32	118	36	20	24	73%	24
UT-Permian Basin	117	59	58	39	27	32	16	53%	16	29	18	16	16	67%	24
UT-San Antonio	200	100	100	52	36	44	32	68%	32	41	36	31	32	76%	32
UT-Tyler	158	58	100	36	18	30	16	62%	24	51	36	27	32	76%	32
TAMU	192	92	100	61	36	34	24	72%	32	53	36	32	32	83%	32
TAMU-Galveston	176	76	100	45	36	30	16	61%	24	37	36	26	32	75%	32
Prairie View	142	75	67	38	27	37	24	61%	24	30	27	24	24	64%	16
Tarleton	134	58	76	34	18	30	16	55%	24	118	36	19	16	69%	24
TAMU-Central	82	41	41	20	9	16	8	60%	24	5	9	3	8	89%	24
TAMU-CC	99	50	49	34	18	29	8	62%	24	22	9	19	16	68%	24
TAMU-Kingsville	132	58	74	34	18	29	8	71%	32	26	18	20	24	75%	32
TAMU-San Antonio	116	58	57	34	18	30	16	59%	24	20	9	18	16	76%	32
TAMI	167	75	92	38	27	30	16	71%	32	40	36	24	24	81%	32
WTAMU	91	33	58	22	9	22	8	54%	16	27	18	26	32	38%	8
TAMU-Commerce	89	50	49	33	18	27	8	59%	24	24	9	16	16	71%	24
TAMU-Teoarkana	82	41	41	16	9	15	8	62%	24	19	9	16	16	55%	16
UT	183	83	100	40	27	35	24	67%	32	42	36	26	32	77%	32
UT-Clear Lake	151	67	84	38	27	31	16	60%	24	40	36	22	24	65%	24
UT-Downtown	141	58	83	31	18	28	8	69%	32	32	27	22	24	85%	32
UT-Victoria	82	33	49	26	9	24	8	52%	16	14	9	8	8	76%	32
Midwestern	133	75	58	40	27	35	24	55%	24	25	18	16	16	66%	24
UNT	184	92	92	54	36	35	24	76%	32	49	36	26	32	74%	24
UNT-Dallas	74	33	41	26	9	24	8	54%	16	20	9	15	16	59%	16
SA	101	41	60	26	9	23	8	64%	24	36	36	19	16	52%	8
TSU	98	49	49	23	9	21	8	72%	32	9	9	7	8	79%	32
TTU	192	92	100	46	36	36	24	68%	32	49	36	30	32	78%	32
Angelo	149	66	83	34	18	31	16	67%	32	33	27	26	32	69%	24
TWU	168	76	92	48	36	33	16	64%	24	36	36	24	24	79%	32
Lamar	134	58	76	36	18	28	8	70%	32	41	36	19	16	73%	24
Sam Houston	158	66	92	33	18	30	16	67%	32	52	36	29	32	70%	24
TaSHU-SM	200	100	100	52	36	42	32	71%	32	67	36	39	32	80%	32
Sul Ross	74	41	33	20	9	15	8	56%	24	11	9	10	8	57%	16
Sul Ross - RG	58	25	33	17	9	16	8	38%	8	3	9	3	8	60%	16
TSTC-Harlingen	133	67	66	42	27	23	8	66%	32	26	18	17	16	91%	32
TSTC-West Texas	74	33	41	11	9	8	8	49%	16	23	9	15	16	56%	16
TSTC-Marshall	141	49	92	28	9	16	8	89%	32	71	36	23	24	79%	32
TSTC-Waco	106	49	57	23	9	18	8	86%	32	23	9	19	16	98%	32
Lamar-IOT	160	76	84	53	36	32	16	60%	24	43	36	35	32	64%	16
Lamar-Orange	184	84	100	47	36	30	16	73%	32	50	36	27	32	91%	32
Lamar-Port Arthur	124	41	83	28	9	26	8	61%	24	30	27	25	32	69%	24

Classroom Weighted Scores						Class Laboratory Weighted Scores					
Score (weight = 9)		Score (weight = 8)		Score (weight = 8)		Score (weight = 8)		Score (weight = 8)		Score (weight = 8)	
45 or >	36	38 or >	32	65% or >	32	35 or >	36	25 or >	32	75% or >	32
38 - 44.9	27	34 - 37.9	24	55 - 64.9	24	30 - 34.9	27	20 - 24.9	24	65 - 74.9	24
31 - 37.9	18	30 - 33.9	16	45 - 54.9	16	25 - 29.9	18	15 - 19.9	16	55 - 64.9	16
< 31	9	< 30	8	< 45%	8	< 25	9	< 15	8	< 55%	8

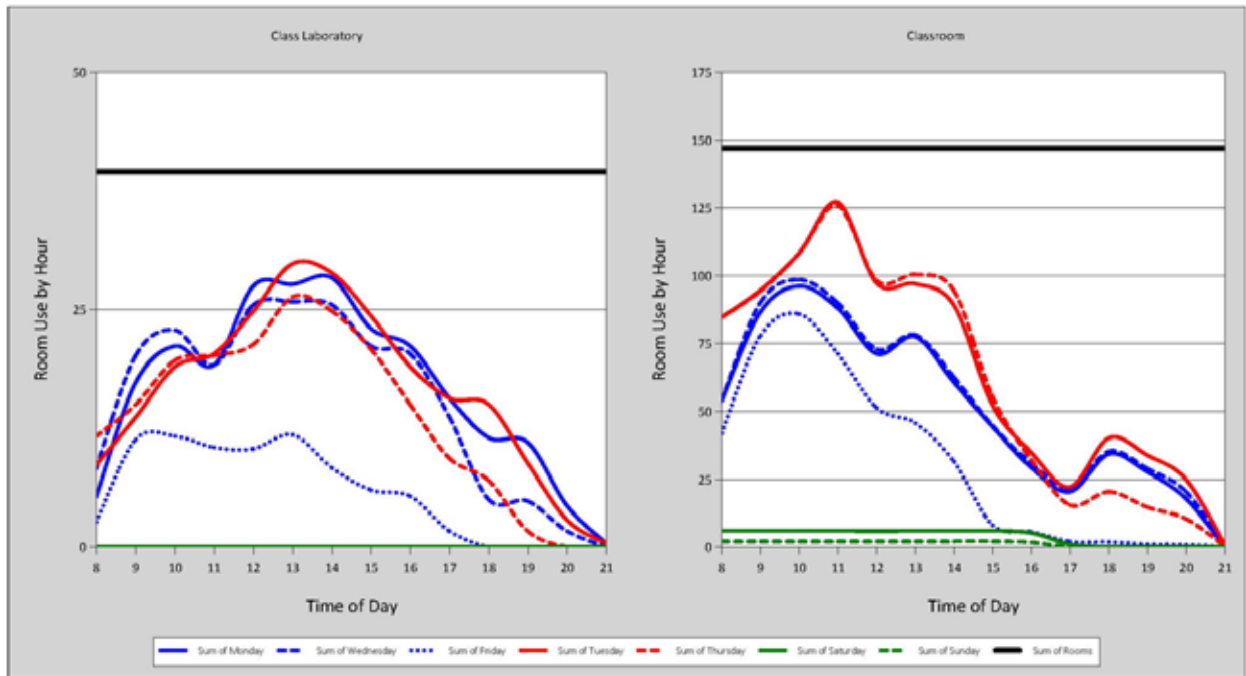
State and Technical Colleges' Demand hours include Continuing Education hours provided on the CRMOOC report.

Last updated 10/2012

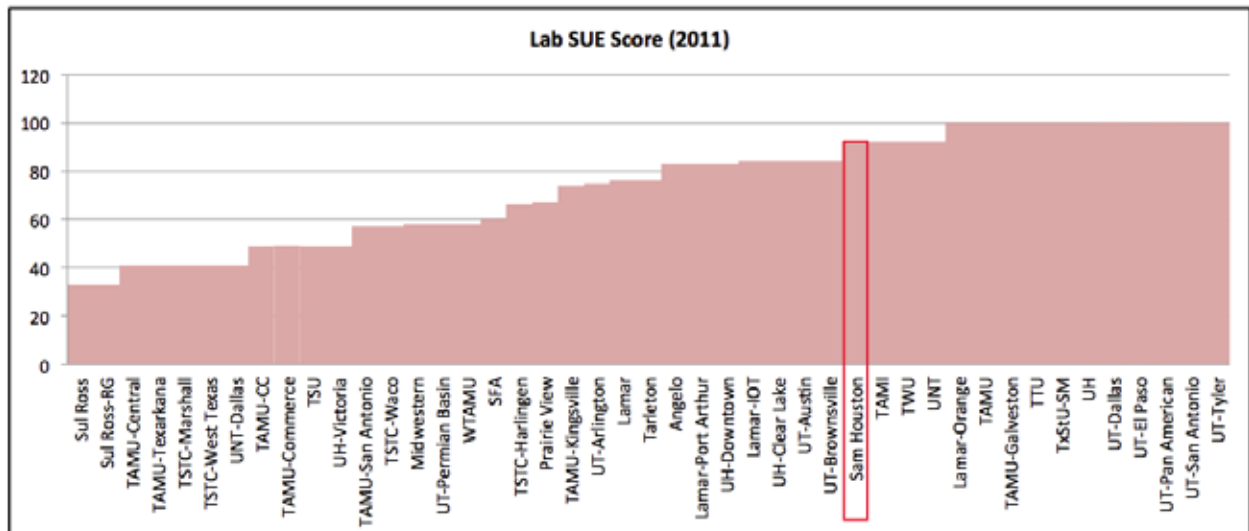
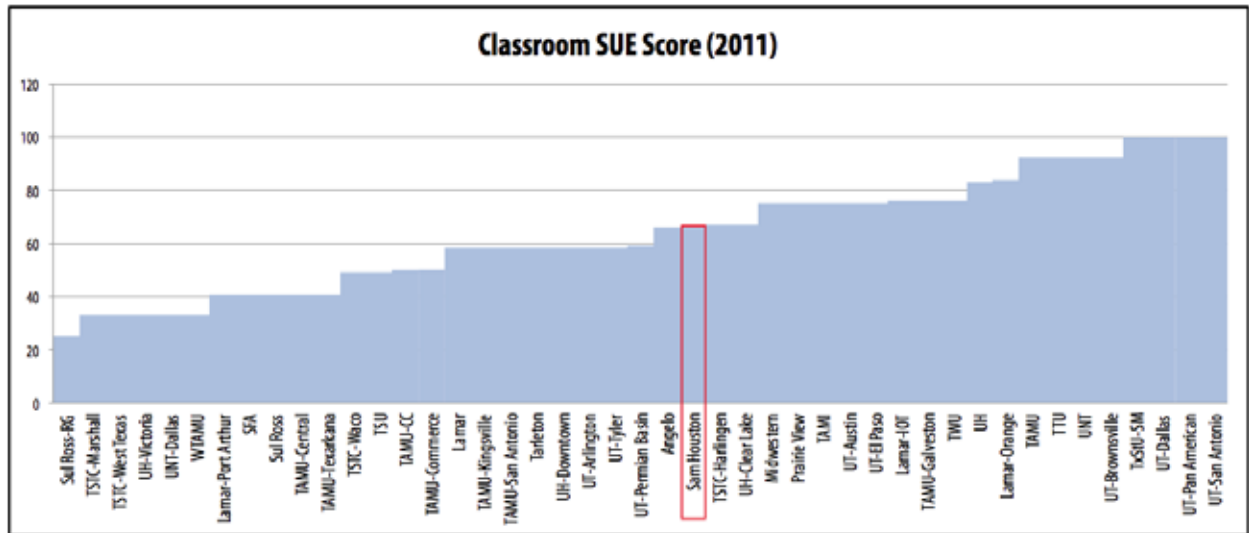
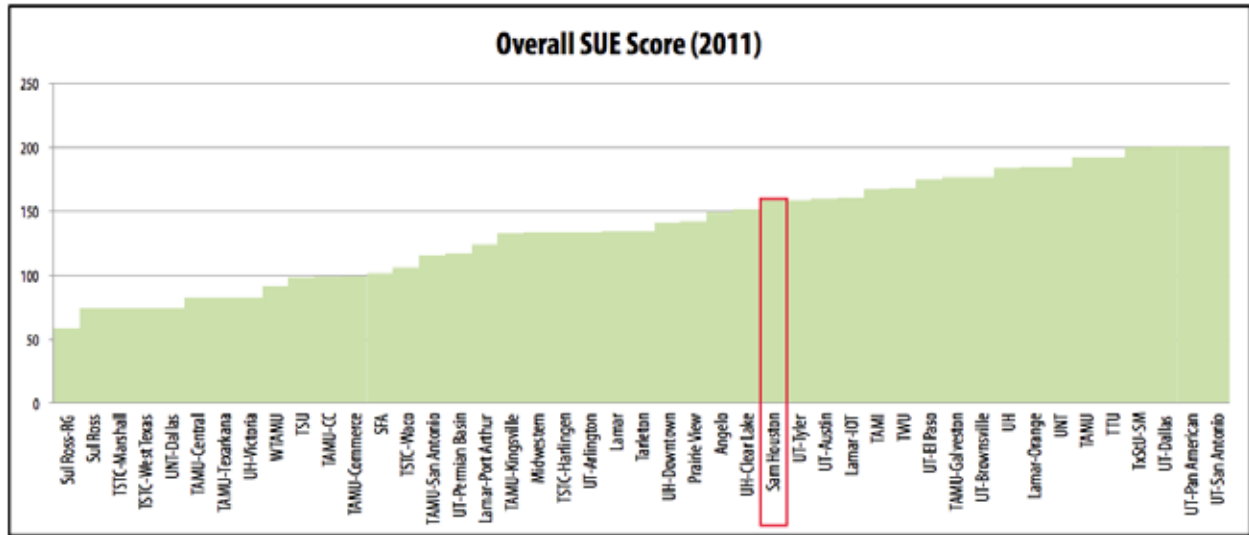
# Master Plan Study

## Existing Space and Utilization

Institution	Overall Score	Classroom Score	Class Lab Score	Classroom						Class Laboratory					
				Demand	Weighted Score	Utilization	Weighted Score	Average Percent Full	Weighted Score	Demand	Weighted Score	Utilization	Weighted Score	Average Percent Full	Weighted Score
Sam Houston	<b>158</b>	66	<b>92</b>	33	18	30	16	67%	32	52	36	29	32	70%	24
				Classroom Weighted Scoring						Class Laboratory Weighted Scoring					
Score (weight = 9)		Score (weight = 8)		Score (weight = 8)		Score (weight = 9)		Score (weight = 8)		Score (weight = 8)		Score (weight = 9)		Score (weight = 8)	
45 or >	36	38 or >	32	65% or >	32	35 or >	36	25 or >	32	75% or >	32	30 - 34.9	27	20 - 24.9	24
38 - 44.9	27	34 - 37.9	24	55 - 64.9	24	30 - 34.9	27	20 - 24.9	24	65 - 74.9	24	25 - 29.9	18	15 - 19.9	16
31 - 37.9	18	30 - 33.9	16	45 - 54.9	16	25 - 29.9	18	15 - 19.9	16	55 - 64.9	16	< 25	9	< 15	8
< 31	9	< 30	8	< 45%	8	< 25	9	< 15	8	< 55%	8				

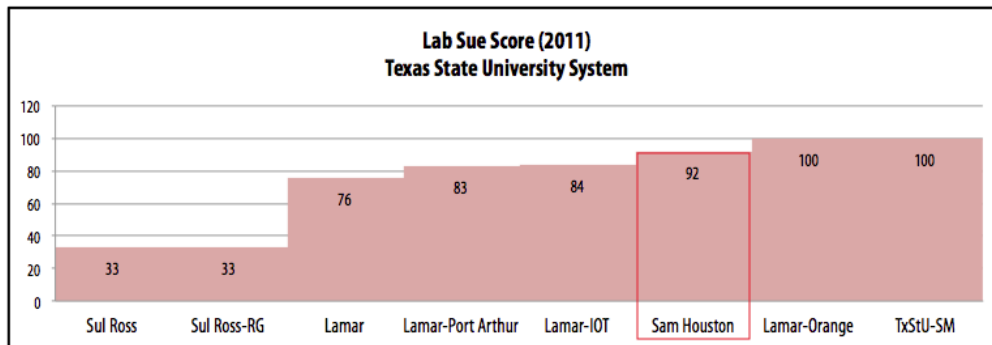
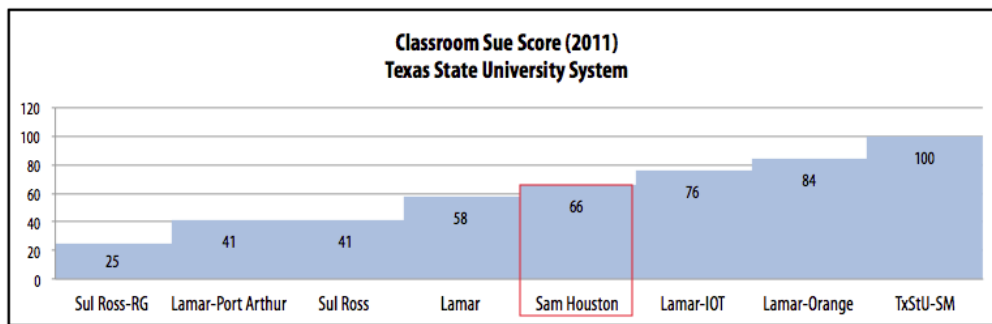
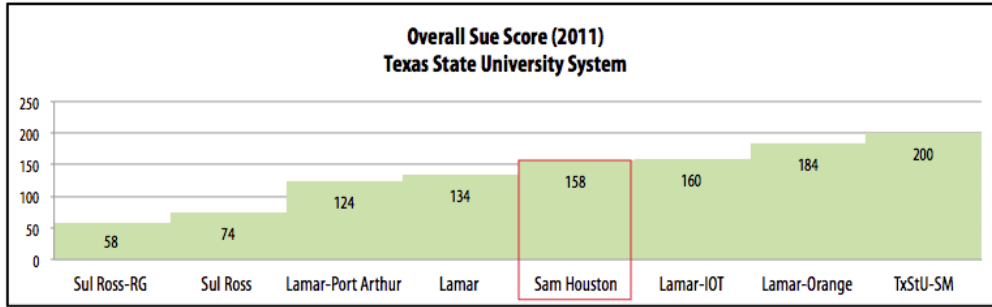






# Master Plan Study

## Existing Space and Utilization



## Classroom Utilization

The following is an overview of the findings from the classroom utilization study:

- Overall utilization is 25 periods/week.
- There are currently 142 classrooms at Sam Houston State University, the majority of which have a capacity of 14 to 40 students.
- The largest classroom being at 250 student capacity and the smallest being at 20 student capacity (3 classrooms).
- Based on a demand analysis of “fit”, there is a need for two additional classrooms with a seating capacity 110 students.
- Peak utilization occurs on Tu/Th at 9:00 AM where nearly 100% of classrooms are scheduled.
- Bringing the maximum capacity and the classroom station counts into parity would result in increasing the average % fill for the SUE score. (SUE average % fill currently stands at 67%.)
- Decreasing the number of available classrooms that are scheduled would also increase the classroom utilization. The inventory points to a surplus of smaller classrooms. Conversion of these to larger classrooms or other types of space (e.g. office or support) would increase the overall periods/week utilization component of the SUE score.
- Repurposing of classroom space creates an opportunity to provide space to meet shortages in administrative and faculty office space.

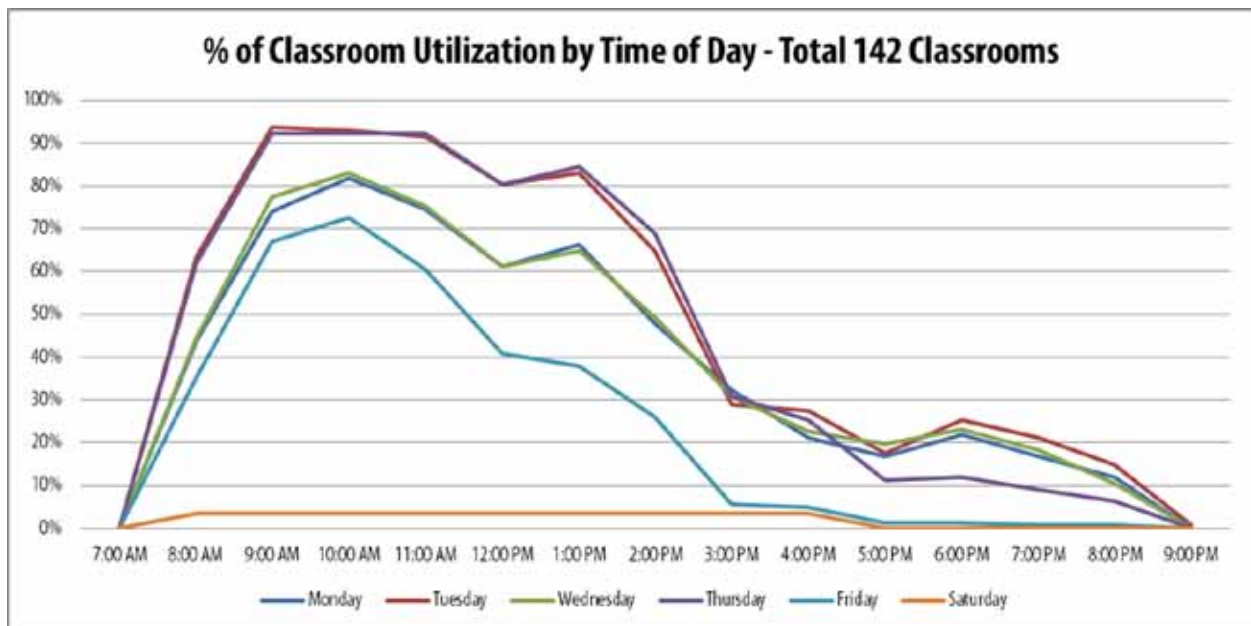
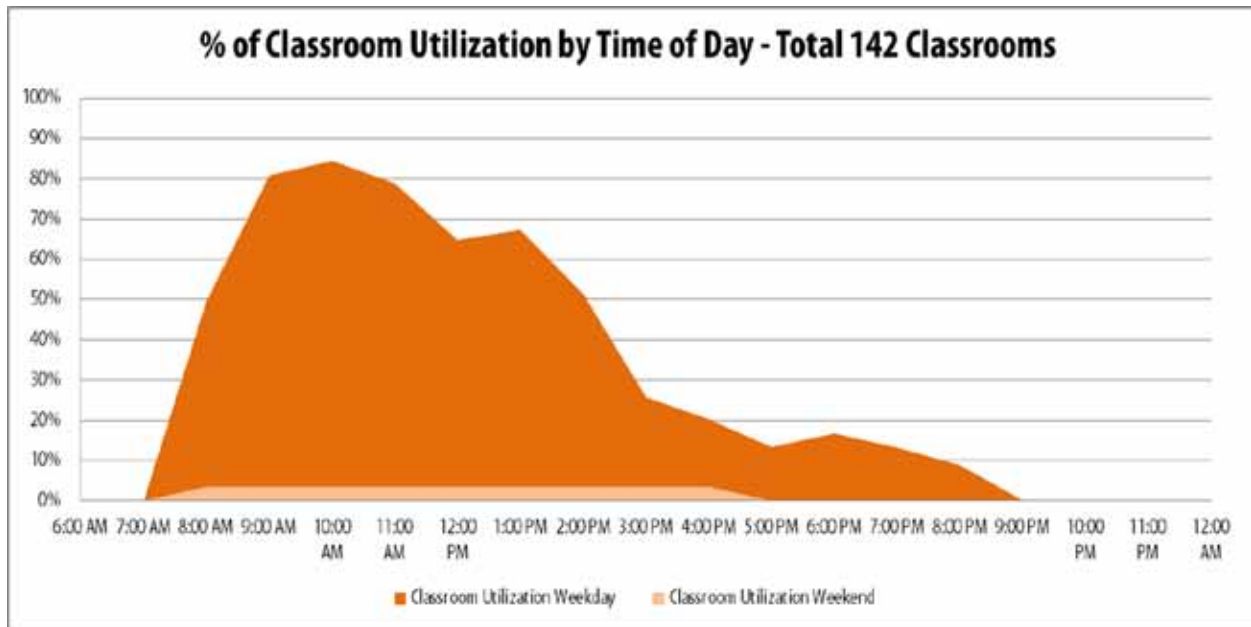
The following graphs illustrate the classroom utilization through each day of the week and the average utilization of each classroom.

Room utilization was studied to measure how often rooms are being scheduled for use. Section occupancy was also analyzed as a measure of how full the scheduled sections are.

THECB targets a utilization of 38-45 periods a week for classrooms, with credit also given for classes with high fill rates. The average weekly classroom utilization is 25 periods/week at Sam Houston State University.

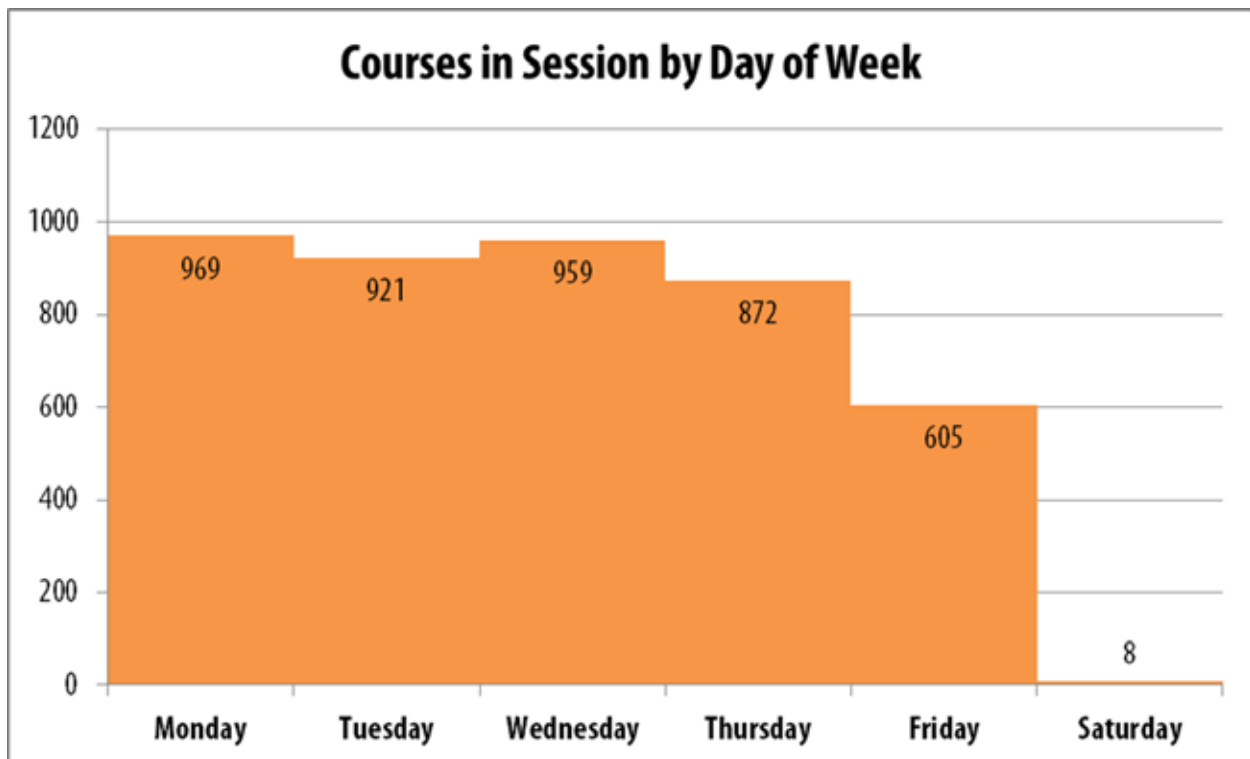
# Master Plan Study

## Existing Space and Utilization



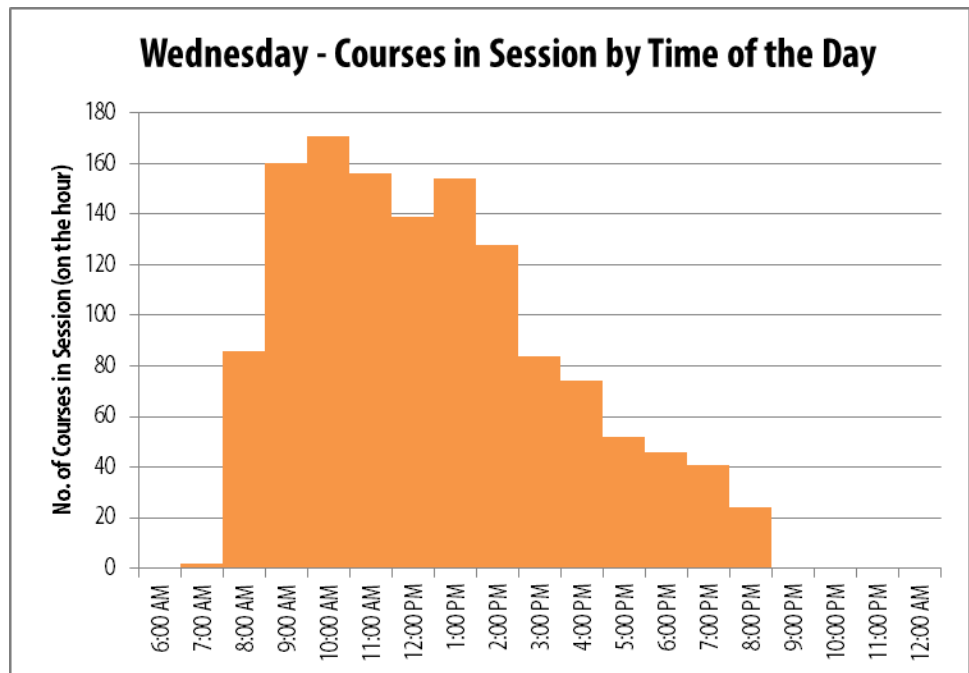
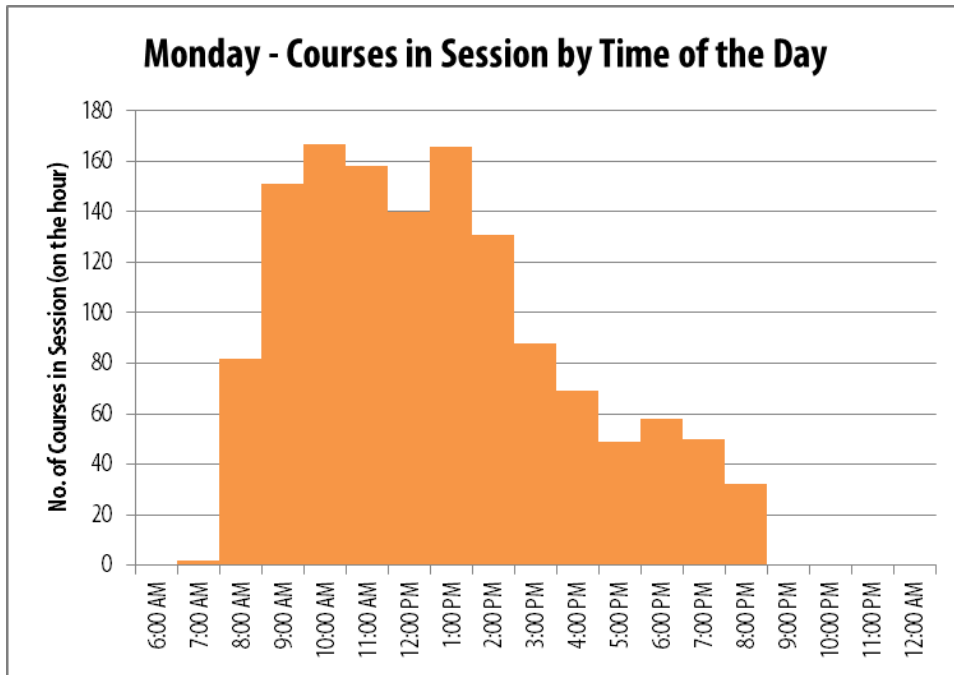
Existing Space and Utilization

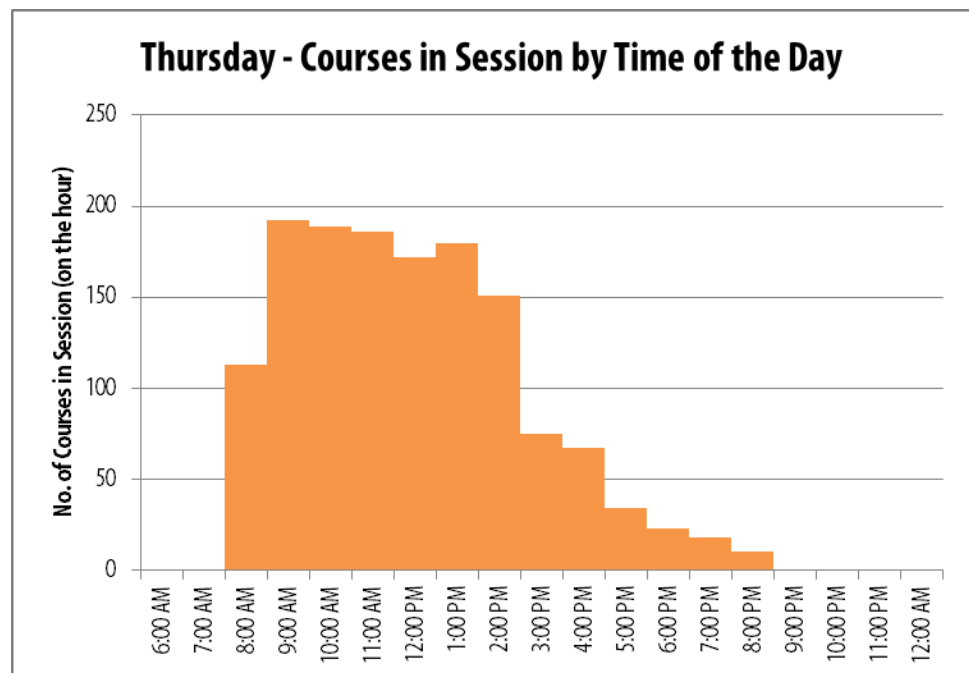
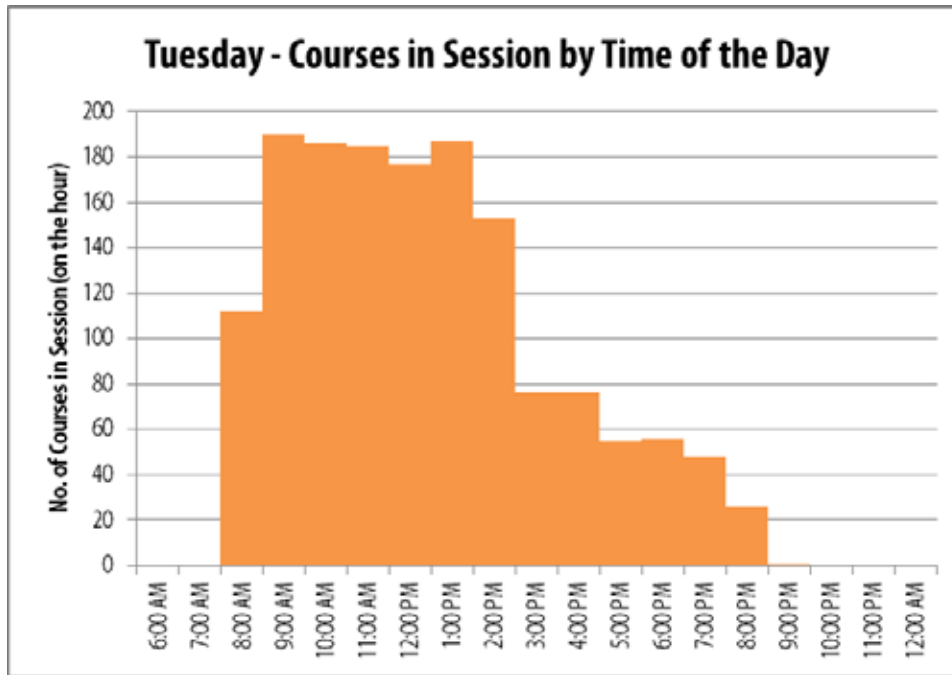
It is also interesting to note that classes are scheduled more intensively Monday through Thursday. There is additional capacity if Friday is scheduled to the same levels as these days.



# Master Plan Study

## Existing Space and Utilization

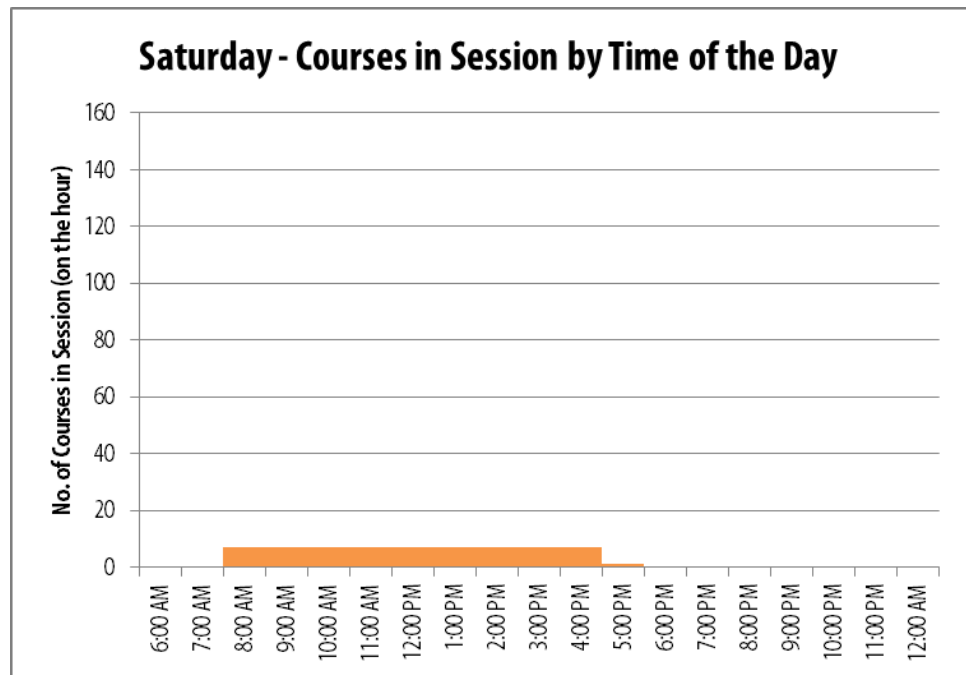
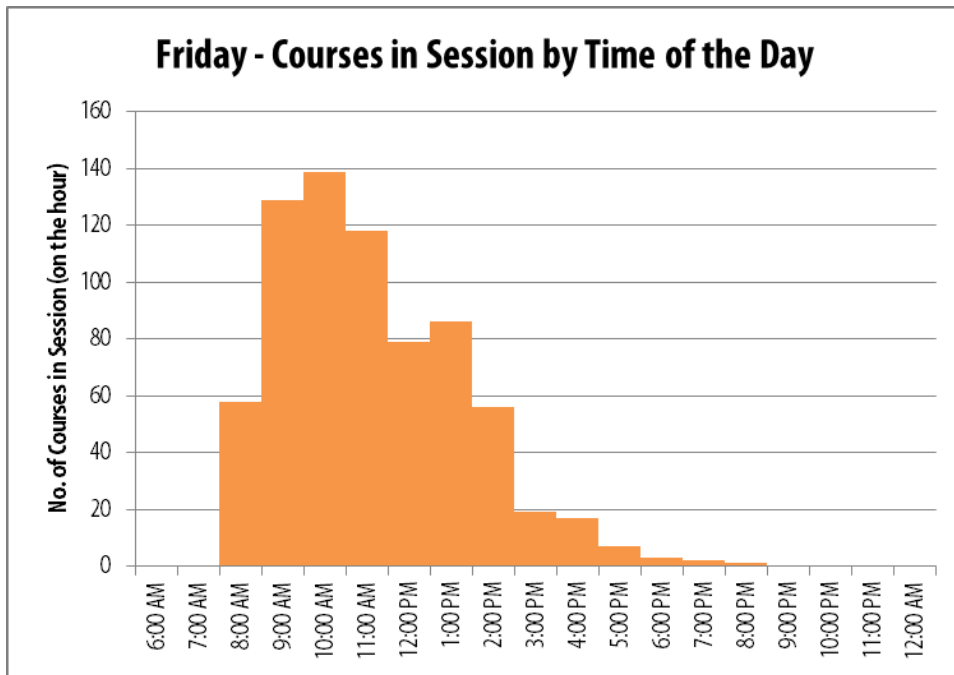




Tu/Th 9 AM is the peak time for the scheduling of courses. This is followed closely by Tu/Th at 1 PM.

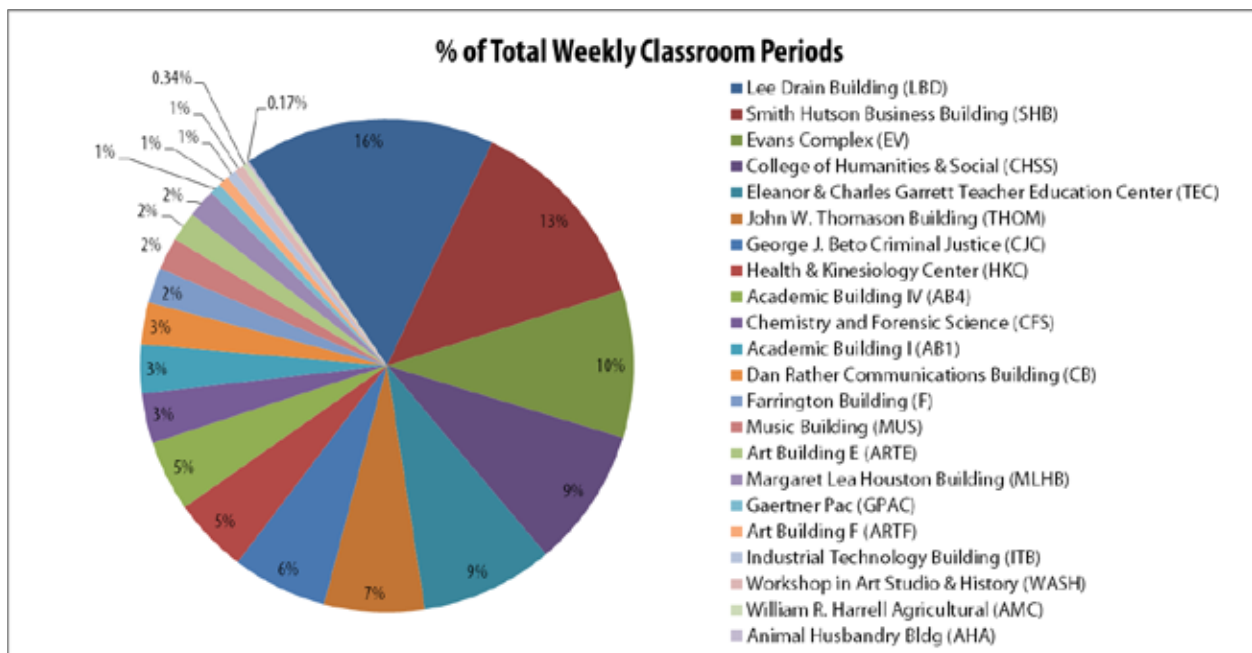
# Master Plan Study

## Existing Space and Utilization



Fridays are considerably less scheduled than M-Th.  
Less than ten courses are scheduled at any time on Saturday.

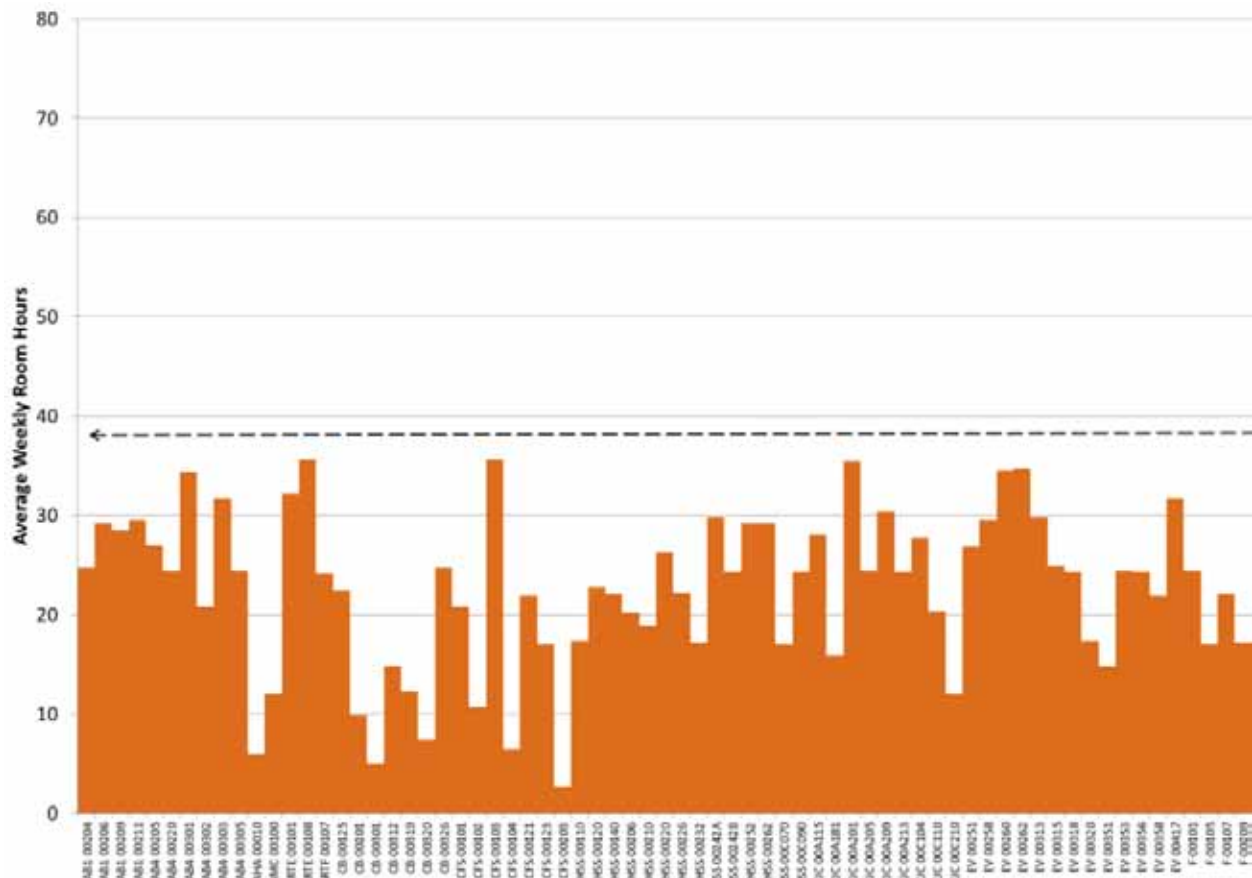




# Master Plan Study

## Existing Space and Utilization

Classroom Utilization by Building								
Building	# of Classrooms	Total Weekly CR Periods	Average Utilization (pds/week)	% of Total Campus-wide Utilization	Classroom ASF	% of Total Campus Classroom ASF	Total Building ASF	Classroom ASF as % of Building
Academic Building I (AB1)	4	112	28	3%	3,478	2%	36,006	10%
Academic Building IV (AB4)	6	163	27	5%	13,875	9%	42,566	33%
Animal Husbandry Bldg (AHA)	1	6	6	0%	970	1%	33,540	3%
William R. Harrell Agricultural (AMC)	1	12	12	0%	1,116	1%	10,788	10%
Art Building E (ARTE)	2	68	34	2%	2,403	2%	3,976	60%
Art Building F (ARTF)	1	24	24	1%	885	1%	3,731	24%
Dan Rather Communications Building (CB)	7	97	14	3%	5,515	4%	23,801	23%
Chemistry and Forensic Science (CFS)	7	115	16	3%	5,561	4%	37,315	15%
College of Humanities & Social (CHSS)	14	321	23	9%	26,600	18%	84,016	32%
George J. Beto Criminal Justice (CJC)	9	219	24	6%	7,240	5%	69,982	10%
Evans Complex (EV)	13	339	26	10%	7,615	5%	27,026	28%
Farrington Building (F)	4	81	20	2%	4,391	3%	33,418	13%
Gaertner Pac (GPAC)	1	26	26	1%	1,078	1%	70,996	2%
Health & Kinesiology Center (HKC)	6	174	29	5%	5,462	4%	74,507	7%
Industrial Technology Building (ITB)	1	22	22	1%	1,420	1%	9,163	15%
Lee Drain Building (LBD)	20	578	29	16%	19,970	13%	82,218	24%
Margaret Lea Houston Building (MLHB)	3	66	22	2%	2,485	2%	14,130	18%
Music Building (MUS)	4	75	19	2%	2,090	1%	28,119	7%
Smith Hutson Business Building (SHB)	21	459	22	13%	19,140	13%	60,582	32%
Eleanor & Charles Garrett Teacher Education Center (TEC)	9	305	34	9%	11,394	8%	47,669	24%
John W. Thomason Building (THOM)	7	231	33	7%	6,109	4%	23,757	26%
Workshop in Art Studio & History (WASH)	1	21	21	1%	2,318	2%	6,094	38%
<b>TOTAL</b>	<b>142</b>	<b>3,513</b>	<b>25</b>	<b>100%</b>	<b>151,115</b>	<b>100%</b>	<b>823,400</b>	<b>18%</b>





# Master Plan Study

## Existing Space and Utilization

Classrooms Scheduled Less than 15 Periods/Week		
Room	Room Capacity	Average Pds/Wk
CFS 00203	20	3
CB 00301	20	5
AHA 00010	45	6
CFS 00104	22	6
CB 00320	31	7
CB 00201	35	10
CFS 00102	22	11
AMC 00100	60	12
CJC 00C210	32	12
CB 00319	48	12
LDB 00328	26	12
SHB 00106	45	13
CB 00312	35	15
EV 00351	28	15

Classrooms Scheduled Between 16 and 20 Periods/Week		
Room	Room Capacity	Average Pds/Wk
CJC 00A181	28	16
MUS 00217	30	17
SHB 00331	40	17
MUS 00219	42	17
F 00105	111	17
CFS 00123	30	17
CHSS 00C070	249	17
F 00209	38	17
CHSS 00232	47	17
SHB 00336	47	17
SHB 00306	52	17
CHSS 00110	123	17
EV 00320	30	17
THOM 00322	48	18
SHB 00139	52	18
CHSS 00210	89	19
SHB 00204	30	20
SHB 00206	72	20
SHB 00134	70	20
SHB 00308	48	20
LDB 00424	26	20
CHSS 00206	47	20
TEC 00111E	48	20
SHB 00138	87	20
CJC 00C.110	58	20

Classrooms Scheduled Between 21 and 23 Periods/Week		
Room	Room Capacity	Average Pds/Wk
MUS 00218	34	21
SHB 00140	30	21
HKC 00247	48	21
MUS 00216	30	21
AB4 00302	48	21
CFS 00101	30	21
MLHB 00301	63	21
WASH 00101	50	21
LDB 00400	49	22
MLHB 00302	46	22
ITB 00101	30	22
CFS 00121	80	22
EV 00358	34	22
SHB 00307	60	22
CHSS 00140	123	22
LDB 00216	90	22
F 00107	35	22
TEC 00271	30	22
LDB 00220	64	22
CHSS 00226	47	22
CB 00125	68	22
SHB 00135	52	22
SHB 00338	49	22
LDB 00431	37	23
CHSS 00120	123	23
MLHB 00201	32	23

Classrooms Scheduled Between 24 and 25 Periods/Week		
Room	Room Capacity	Average Pds/Wk
LDB 00207	68	24
ARTF 00107	30	24
CJC 00A213	24	24
EV 00318	29	24
CHSS 00242B	45	24
CHSS 00C090	249	24
EV 00356	33	24
CJC 00A205	25	24
AB4 00220	289	24
AB4 00305	48	24
EV 00353	30	24
SHB 00341	52	24
F 00101	56	24
LDB 00215	89	25
CB 00326	30	25
AB1 00204	60	25
EV 00315	31	25
SHB 00309	36	25
SHB 00108	48	25

# Master Plan Study

## Existing Space and Utilization

Classrooms Scheduled Between 26 and 29 Periods/Week		
Room	Room Capacity	Average Pds/Wk
TEC 00113	48	26
GPAC 00240	32	26
CHSS 00220	89	26
THOM 00221	79	27
EV 00251	54	27
AB4 00205	39	27
SHB 00335	48	27
HKC 00246	48	27
LDB 00403	39	27
THOM 00318	35	28
SHB 00337	44	28
CJC 00C104	48	28
LDB 00213	93	28
LDB 00214	162	28
CJC 00A115	50	28
TEC 00115	48	28
HKC 00240	42	28
AB1 00209	20	29
AB1 00206	60	29
CHSS 00252	89	29
CHSS 00262	47	29
AB1 00211	28	29
EV 00258	36	29

Classrooms Scheduled Between 30 and 35 Periods/Week		
Room	Room Capacity	Average Pds/Wk
EV 00313	40	30
CHSS 00242A	47	30
SHB 00202	48	30
SHB 00133	53	30
TEC 00107G	48	30
HKC 00239	39	30
CJC 00A209	48	30
THOM 00320	30	31
EV 00417	40	32
AB4 00303	48	32
THOM 00209	42	32
ARTE 00101	22	32
THOM 00217	42	33
HKC 00248	53	33
HKC 00241	71	34
LDB 00212	93	34
LDB 00218	42	34
AB4 00301	37	34
TEC 00131	45	34
LDB 00219	48	34
LDB 00205	37	35
EV 00260	37	35
EV 00262	33	35
LDB 00401	44	35
CJC 00A201	49	35

Classrooms Scheduled More than 35 Periods/Week		
Room	Room Capacity	Average Pds/Wk
ARTE 00108	100	36
CFS 00103	80	36
TEC 00278	30	36
LDB 00208	48	36
LDB 00204	36	37
LDB 00209	40	40
LDB 00402	41	41
TEC 00279	50	41
THOM 00325	48	64
TEC 00273	50	67

# Master Plan Study

## Existing Space and Utilization

### Demand Analysis

In the chart below, the “Section Size Range” column categorizes the range of students in the course-sections. The number of sections according to the size range, requiring the use of general assignment classrooms, is listed under the “Total Sections” column. The “Total Required Room Periods” pertains to the cumulative number of scheduled weekly full-time equivalent (FTE) teaching periods of all sections included in the range. The normal teaching period is considered to be 50 minutes. Thus, 50 minutes of class time equals 1 weekly room period. The “Max Room Capacity” is the number of seats that must be in the room in order to accommodate the largest section to be scheduled in the room, the upper limit of the section size range, and must take into consideration the margin for scheduling variations. A “cushion” is applied in planning by intentionally sizing the seating capacities per room to exceed measured demand in scheduling.

CLASSROOM DEMAND ANALYSIS REPORT						
Institution:		Sam Houston State University			CLASSROOM USE	
ACADEMIC TERM:		FALL 2011			STANDARD	
DATE:		July 16, 2012			:PERIODS/WEEK	
				38		
USING MAXIMUM SECTION SIZES:						
SECTION SIZE	TOTAL SECTIONS	TOTAL REQUIRED ROOM PERIODS	MAXIMUM ROOM CAPACITY	TOTAL REQUIRED ROOMS	NO. OF AVAILABLE ROOMS	BALANCE
001 - 013	22	60	20	2	3	1
014 - 027	525	1343	40	36	53	17
028 - 040	461	1147	55	31	53	22
041 - 053	190	492	70	13	11	(2)
054 - 068	41	101	90	3	11	8
069 - 088	90	198	110	6	3	(3)
089 - 131	50	122	150	4	4	0
132 - 174	11	27	200	1	1	0
175 - 196	1	2	225	1	0	(1)
197 - 218	3	7	250	1	2	1
219 - 253	2	5	290	1	1	0
<b>TOTALS</b>	<b>1,396</b>	<b>3,504</b>		<b>99.0</b>	<b>142.0</b>	<b>43.0</b>



The “cushion” serves as a sliding scale that affords smaller rooms with a greater margin and larger rooms with less of a margin. This variable margin results in better utilization of space by over sizing larger rooms. The “Total Required Rooms” is the necessary amount of rooms required to accommodate the total number of periods in the section size range. The THECB goal of efficiency is achieved when a room is used a minimum of 38 periods per week. The “No. of Available Rooms” is the current number of rooms providing tablets or tables and chairs in the section size range. The “Balance” column indicates the current deficit or surplus of each room capacity category.

An integral step in classroom planning is to determine the need and number of classrooms for any given capacity. Below is a profile of current class section sizing patterns and is indicative of the classroom sizes necessary to support all of the current departments. The Fall 2011 schedule was used to determine the demand for contact hours. By determining the required number of rooms based on the room capacities, classroom demand is generated and deficiencies are revealed. Using a target utilization of 38 periods per week, the demand analysis indicates the need for approximately 99 classrooms for the current student enrollment. This is currently being met by a supply of 142 available classrooms. While there is an overall surplus of classrooms, it is important to gauge the section sizes demanded to the sizes of the classrooms. Therefore, further attention must be paid to the surplus and deficit of specific capacity classrooms. For example, the balance column in the table below shows a surplus of 43 classrooms overall. Maximum section sizes “demand” only 99 of the 142 classrooms on campus. However, this overall surplus masks the need for an additional 2 classrooms with a capacity of 110 as well as additional classrooms with a capacity of 196.

New classroom construction should focus on building classrooms that are sized appropriately.

# Master Plan Study

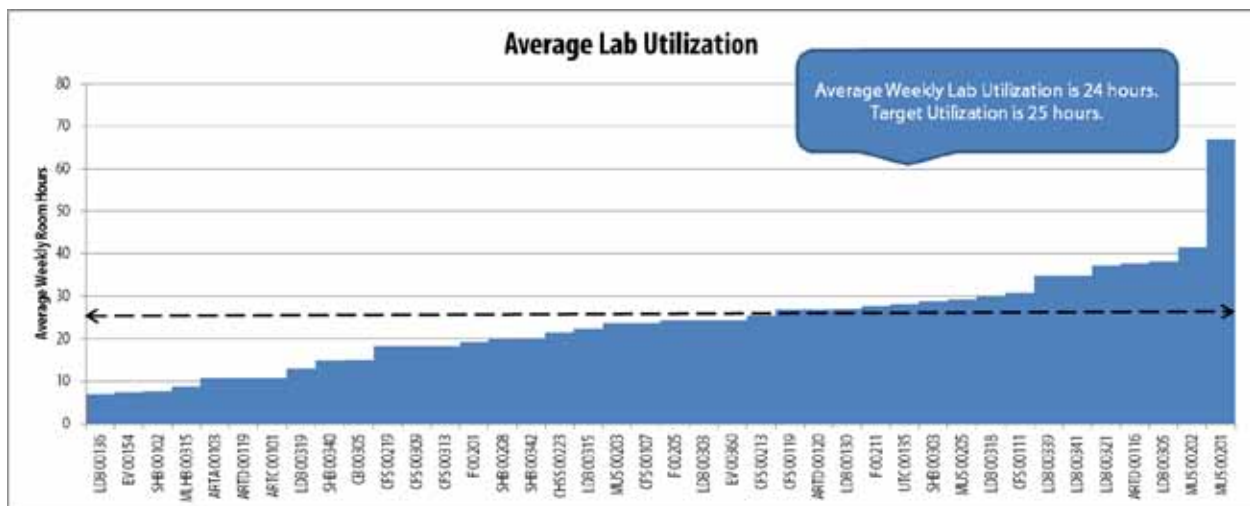
## Existing Space and Utilization

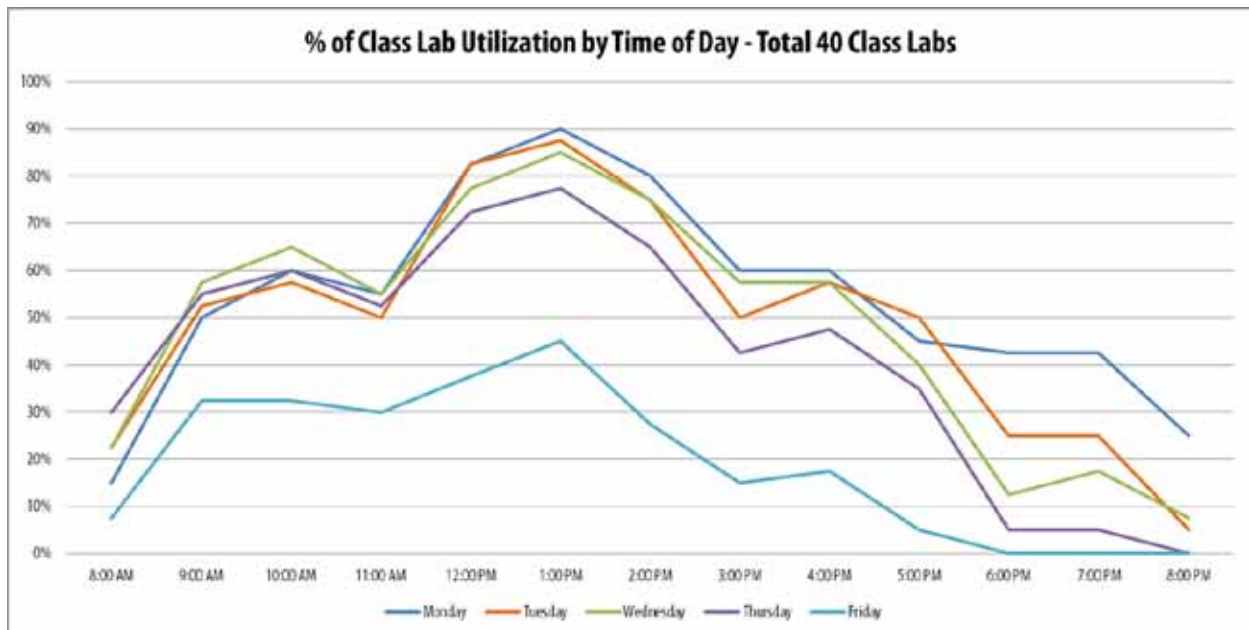
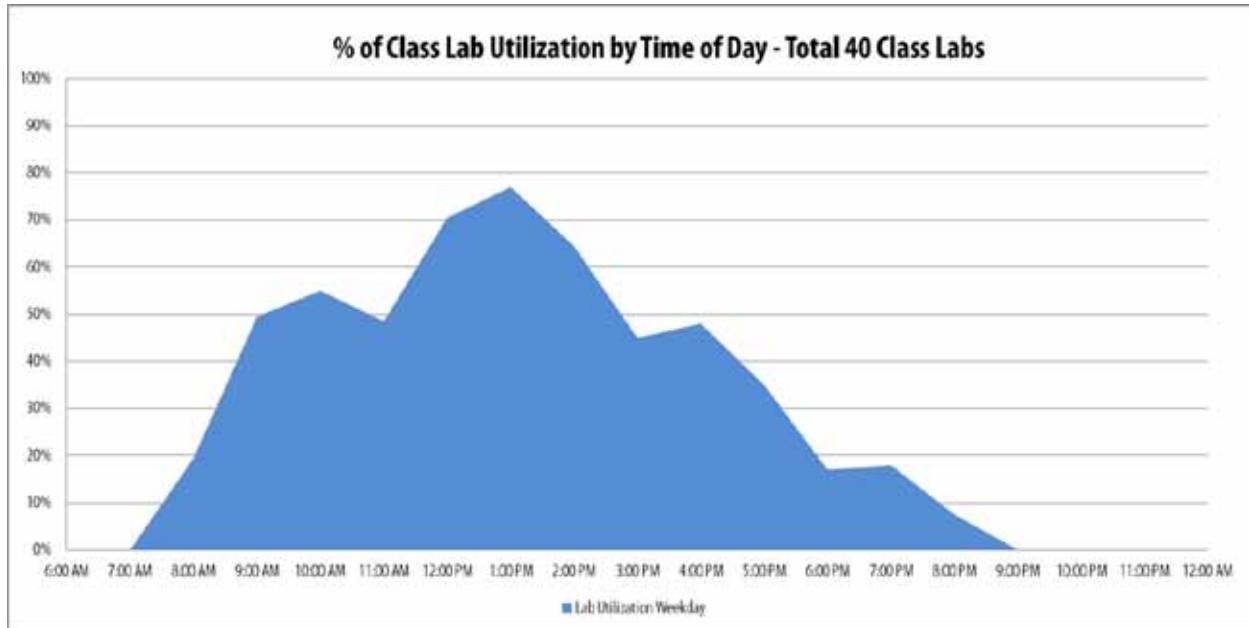
### Laboratory Utilization

The following is an overview of the findings from the class lab utilization study:

- There are currently 40 class labs being scheduled at an average of 24 periods/week.
- Peak utilization occurs on Tuesday and Thursday at 1:00 PM where 90% and 88% of labs are scheduled.
- Average section enrollment to maximum capacity is 83%. SUE % fill is at 70% (average section enrollment to lab stations). This indicates the need to set maximum capacities to lab capacities (where lab capacities cannot be adjusted) or to reduce the number of lab stations (in labs where capacities can be adjusted)
- Natural science lab sizes indicate that there is “disconnect” between the capacity and maximum section size which will continue to lower the lab SUE score. “Spare” lab stations could possibly be removed or used as undergraduate/graduate research space. The “disconnect” in size masks a strong unmet demand for additional natural sciences labs.
- Average lab scheduled periods/week indicate demand for additional natural science labs

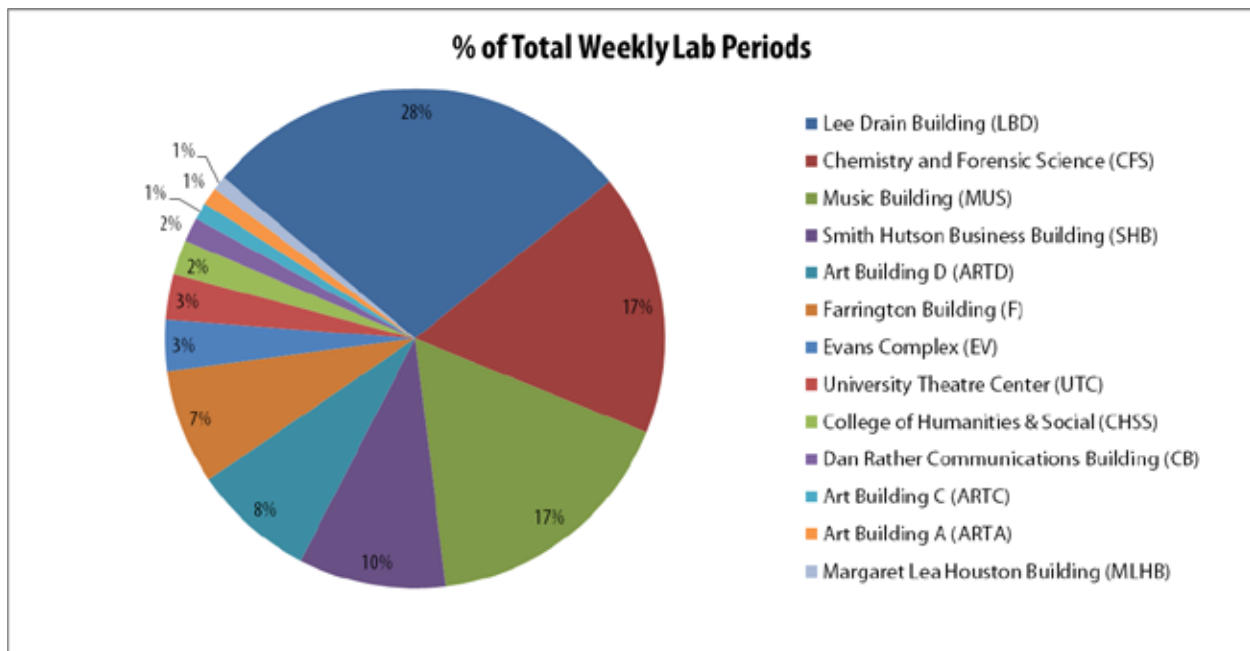
THECB targets a utilization of 25 hours a week for class labs, with credit also given for classes with high fill rates. The average weekly laboratory utilization is 24 periods/week. Projected growth in enrollment combined with unmet demand for additional sections indicates a need for more instructional labs in the natural sciences.



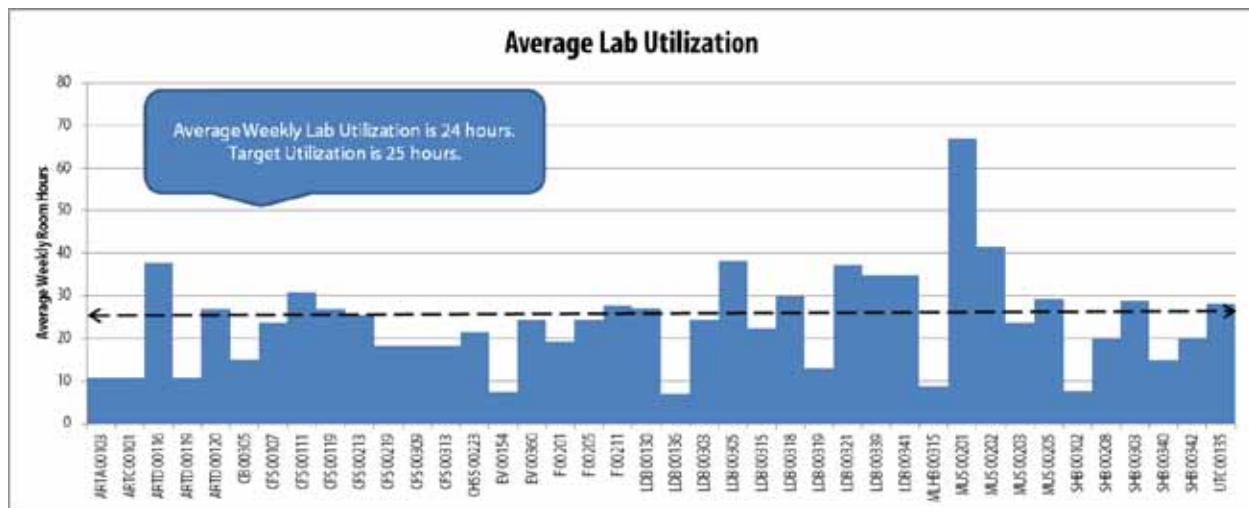


# Master Plan Study

## Existing Space and Utilization



Lab Utilization by Building								
Building	# of Class Labs	Weekly Lab Periods	Average Utilization (pds/week)	% of Total Campus-wide Utilization	Class Lab ASF	% of Total Campus Class Lab ASF	Total Building ASF	Class Lab ASF as % of Building
Art Building A (ARTA)	1	11	11	1%	1934	2%	5,947	33%
Art Building C (ARTC)	1	11	11	1%	1152	1%	4,259	27%
Art Building C (ARTD)	3	75	25	8%	3,525	3%	5,076	69%
Dan Rather Communications Building (CB)	1	15	15	2%	630	1%	23,801	3%
Chemistry and Forensic Science (CFS)	7	162	23	17%	10,635	10%	37,315	29%
College of Humanities & Social (CHSS)	1	21	21	2%	359	0%	84,016	0%
Evans Complex (EV)	2	32	16	3%	1,357	1%	27,026	5%
Farrington Building (F)	3	71	24	7%	4,135	4%	33,418	12%
Lee Drain Building (LBD)	10	268	27	28%	8,808	9%	82,218	11%
Margaret Lea Houston Building (MLHB)	1	9	9	1%	841	1%	14,130	6%
Music Building (MUS)	4	161	40	17%	6,120	6%	28,119	22%
Smith Hutson Business Building (SHB)	5	91	18	10%	4,240	4%	60,582	7%
University Theatre Center (UTC)	1	28	28	3%	1,079	1%	25,350	4%
<b>TOTAL</b>	<b>40</b>	<b>955</b>	<b>24</b>	<b>100%</b>	<b>102,185</b>	<b>1</b>	<b>431,257</b>	<b>24%</b>



# Master Plan Study

## Existing Space and Utilization

Labs Scheduled Less than 25 Periods/Week			
Room	Description	Room Capacity	Average Pds/Wk
LDB 00136	Biology/Biological Sciences	24	7
EV 00154	Creative Writing	24	8
SHB 00102	Banking And Financial Support Services	30	8
MLHB 00315	Housing And Human Environments	33	9
ARTA 00103	Design And Visual Communications	25	11
ARTD 00119	Design And Visual Communications	25	11
ARTC 00101	Art/Art Studies	32	11
LDB 00319	Geology/Earth Science	27	14
SHB 00340	Banking And Financial Support Services	40	16
CB 00305	Mass Communication/Media Studies	34	16
CFS 00219	Forensic Science And Technology	24	19
CFS 00309	Analytical Chemistry	32	19
CFS 00313	Inorganic Chemistry	32	19
F 00201	Physics	32	20
SHB 00208	Business/Commerce	36	21
SHB 00342	Business Administration And Management	40	21
CHSS 00223	Social Sciences	15	23
LDB 00315	Geology/Earth Science	33	24
MUS 00203	Music	17	25
CFS 00107	Inorganic Chemistry	32	25

Labs Scheduled More than 25 Periods/Week			
Room	Description	Room Capacity	Average Pds/Wk
F 00205	Physics	33	26
LDB 00303	Biology/Biological Sciences	30	26
EV 00360	Communication Studies/Speech Communication And Rhetoric	26	26
CFS 00213	Chemistry	24	27
CFS 00119	Organic Chemistry	18	28
ARTD 00120	Design And Visual Communications	25	29
LDB 00130	Botany/Plant Biology	30	29
F 00211	Physics	40	29
UTC 00135	Drama And Dramatics/Theatre Arts	36	30
SHB 00303	Business Administration And Management	42	31
MUS 00205	Music	40	31
LDB 00318	Geology/Earth Science	33	32
CFS 00111	Chemistry	32	33
LDB 00339	Biology/Biological Sciences	30	37
LDB 00341	Biology/Biological Sciences	30	37
LDB 00321	Geography	32	39
ARTD 00116	Design And Visual Communications	30	40
LDB 00305	Biology/Biological Sciences	30	40
MUS 00202	Music	56	44
MUS 00201	Music	170	71

