SPACE UTILIZATION STANDARDS AND SPACE NEEDS MODEL

OVERHEAD PRESENTATION

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KENTUCKY POSTSECONDARY EDUCATION

Space Utilization Standards and Space Needs Model

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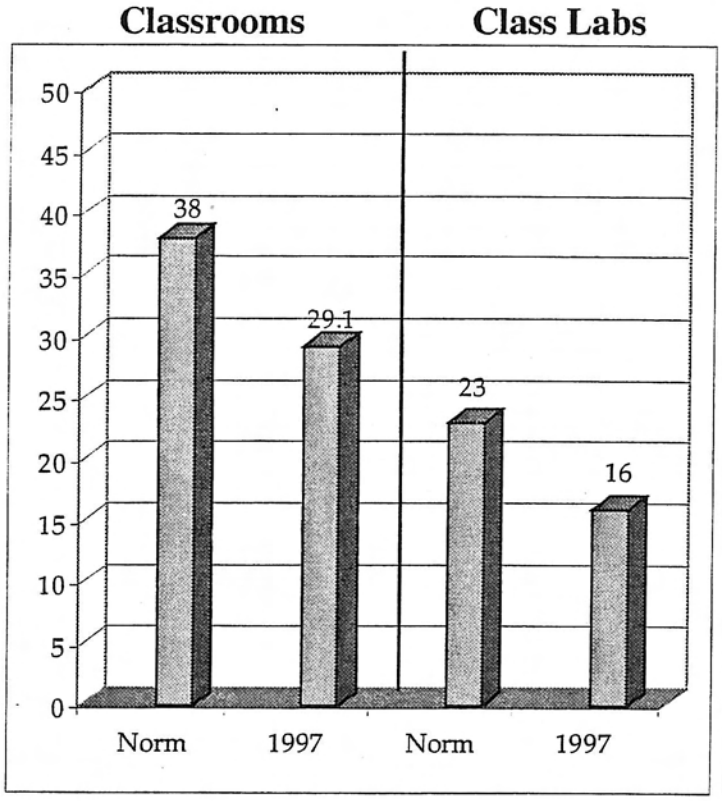
KENTUCKY CURRENT

Classroom & Class Lab Utilization

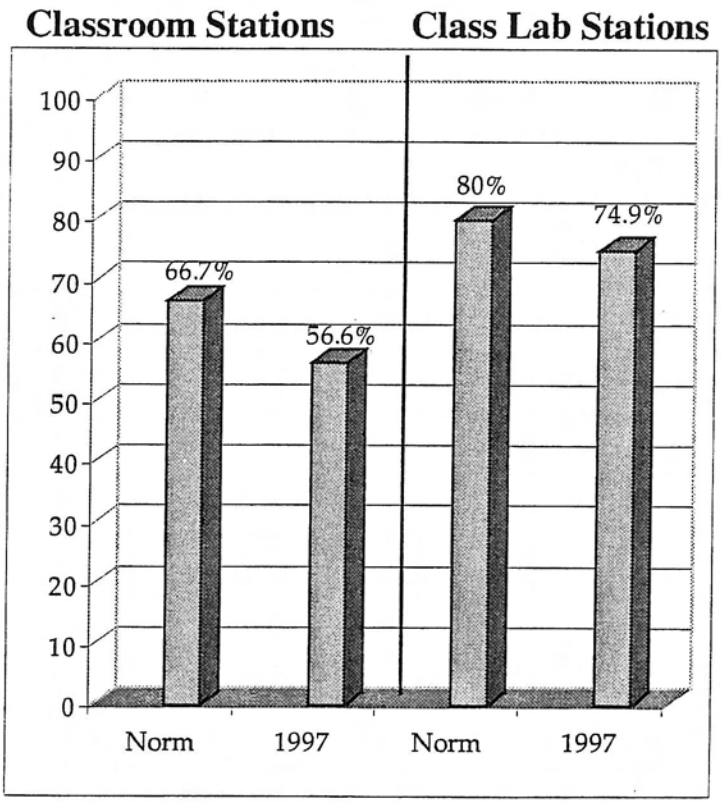
Suggested Weekly Norms

Classrooms	38.0 hours
Class Labs	23.0 hours
Classroom Stations	66.7%
Class Lab Stations	80.0%

***Weekly Use of Rooms** (hours)*



***Weekly Use of Student Stations** (percent)*



KENTUCKY CURRENT

Classroom & Class Lab Utilization

Weekly Room Use by Sector

Fall 1997

	Total Rooms Available (n)	Average Use Per Week (hours)
Classrooms		
Doctoral Universities	416	30.0
Comprehensive Universities	864	27.2
Community Colleges	381	32.5
TOTAL	**1,661**	**29.1**
Class Labs		
Doctoral Universities	234	17.1
Comprehensive Universities	438	13.8
Community Colleges	178	18.7
TOTAL	**850**	**16.0**

KENTUCKY CURRENT

Classroom & Class Lab Utilization

Weekly Use of Student Stations

Fall 1997

	Total Stations Available (n)	Average Use Per Week (percent)
Classrooms		
Doctoral Universities	23,627	55.0
Comprehensive Universities	41,891	55.1
Community Colleges	14,553	62.4
TOTAL	**80,071**	**56.6**
Class Labs		
Doctoral Universities	5,984	78.0
Comprehensive Universities	10,357	70.3
Community Colleges	4,198	78.0
TOTAL	**20,539**	**74.9**

KENTUCKY POSTSECONDARY EDUCATION

Classroom Utilization

	Hours/ Week	Associated % Station Occupancy
Kentucky Current Norm	38	67%
Kentucky Average	29	57%
Highest Guideline	53	66%
Average of Guidelines	34	64%
Lowest Guideline	30	60%
Recommended	36	67%

NOTE: Kentucky data based on all hours weekly utilization. Many of the other guideline systems are based on day use only. Therefore, the average and lowest guidelines are not comparable to the Kentucky approach.

Space Needs Model

- **CLASSROOMS**
  - Space Per FTE Student Method
    - Texas — 12 asf/FTE* student
    - Minnesota Universities, Community Colleges — 10 asf/FTE student
    - Utah — 9 asf/FTE student
    - Pima Comm Coll — 9 asf/FTE student
    - Minnesota Technical Colleges — 13 asf/FTE student
    - Kentucky Average — 15 asf/FTE student

** (11 asf + 1 asf service)*

Space Needs Guidelines

- **CLASSROOMS** *(cont.)*
  - Issues
    - Move toward more space intensive classroom furnishings to support active learning, technology and ADA access.
    - Under-utilization of most Kentucky classrooms.

Space Needs Models

- **CLASSROOMS** *(cont.)*
  - Use Recommendations
    - 36 hours per week
    - 67% station occupancy
    - 25.5 hours per week per station
    - 20 asf per student station
  - Classroom Recommendation

    Assignable Square Feet per Student

– Doctoral Universities	10 asf/FTE
– Comprehensive Universities	10 asf/FTE
– Community Colleges	10 asf/FTE
– Technical Colleges	13 asf/ headcount

KENTUCKY POSTSECONDARY EDUCATION

Laboratory Utilization

	Hours/ Week	Associated % Station Occupancy
Kentucky Current Norm	23	80%
Kentucky Average	16	75%
Highest Guideline	27.5	85%
Average of Guidelines	22	77%
Lowest Guideline	20	70%
Recommended	23	80%

NOTE: Kentucky data based on all hours weekly utilization. Many of the other guideline systems are based on day use only. Therefore, the average and lowest guidelines are not comparable to the Kentucky approach.

Space Needs Model

- **TEACHING LAB GUIDELINES**
  - Utah
    - 10 asf/FTE *
    - extra 8 asf/FTE for voc/tech programs *
  - Pima Community College District
    - 8 asf/FTE

** Estimated. Utah combines teaching labs and open labs.*

Space Needs Guidelines

- **TEACHING LAB GUIDELINES** *(cont.)*
  - Minnesota State Colleges and Universities *(proposed)*
    - Community Colleges
      - *8 asf/FTE*
    - State Universities
      - *10 asf/FTE*
    - Consolidated Community Colleges/Technical Colleges
      - *27 asf/FTE*
    - Technical Colleges
      - *50 asf/FTE*

Space Needs Guidelines

- **TEACHING LAB GUIDELINES** *(cont.)*
  - Texas Coordinating Board
    - Universities
      - core allocation
        8 asf/FTE
      - service space
        2 asf/FTE
      - sciences and languages
        extra 15 asf/FTE
      - university agriculture, visual and performing arts
        extra 30 asf/FTE

Space Needs Guidelines

- **Texas Coordinating Board***(cont.)*
  - Complex formula with lower allocations for graduate work and lower factors for schools with over 15,000 FTE
  - Technical Colleges
    - secretarial, data processing, drafting, culinary, electronics
      extra 15 asf/FTE
    - vocational nursing, allied health, printing & graphics
      extra 45 asf/FTE
    - auto, machinery, agriculture, construction, fire, cosmetology
      extra 75 asf/FTE

Space Needs Guidelines

- **TEACHING LABS** *(cont.)*
  - Utilization Recommendation
    - 23 hours per week
    - 80% station occupancy
    - 18 hours per week per station
  - Kentucky Actual Assignable Space per Student

– Doctoral Universities	9 asf/FTE
– Comprehensive Universities	13 asf/FTE
– Community Colleges	9 asf/FTE
– Technical Colleges	28 asf/ headcount

Space Needs Guidelines

• TEACHING LABS *(cont.)*

- Issue
  - use of existing labs is substantially below the suggested norm
- Teaching Lab Recommendation
  Assignable Square Feet per Student

– Doctoral Universities	8 asf/FTE
– Comprehensive Universities	10 asf/FTE
– Community Colleges	8 asf/FTE
– Technical Colleges*	24 asf/ headcount

**Utilization analysis may show that some space coded as Open Lab belongs in Teaching Lab category. The two model factors should be looked at together.*

Space Needs Model

• OPEN LABS

- Other States
  - Texas — 8 asf/FTE *(6 plus 2 asf for service)*
  - Utah — 7 asf/FTE*
  - Minnesota (proposed)
    - Community Colleges - 5 asf/FYE student
    - Consolidated Colleges - 13 asf/FYE student
    - State Universities - 7 asf/FYE student
    - Technical Colleges - 18 asf/FYE student
- Kentucky Actual Assignable Space per Student
  - Doctoral Universities — 9 asf/FTE
  - Comprehensive Universities — 9 asf/FTE
  - Community Colleges — 6 asf/FTE
  - Technical Colleges — 51 asf/headcount

** Estimated. Utah combines teaching and open lab categories.*
*** ASF per headcount student.*

Space Needs Model

• OPEN LABS *(cont.)*

■ Open Lab Recommendation

Assignable Square Feet Per Student

– Doctoral Universities	8 asf/FTE
– Comprehensive Universities	8 asf/FTE
– Community Colleges	7 asf/FTE
– Technical Colleges	45 asf/ Headcount

Space Needs Model

- **RESEARCH GUIDELINE APPROACHES**
  - Space per faculty team (by discipline)
  - Space per individual researcher (by discipline)
  - Space per dollar value of research expenditures
  - Space per FTE student

Space Needs Model

- **RESEARCH SPACE BY DOLLAR VALUE OF R&D - Other States**
  - Texas - 9,000 asf per $1,175,000 (adjusted for inflation annually)
  - Virginia
    - Lab-intensive disciplines - 800 asf per $100,000
    - Non-lab intensive disciplines - 450 asf per $100,000
    - Plus 10 asf per FTE graduate student

Space Needs Model

- **RESEARCH SPACE BY DOLLAR VALUE OF R&D EXPENDITURES**
  - Recommendation - 700 asf per $100,000 campuswide

Issues: NSF database does not show any R&D expenditures for Eastern, Morehead, Northern, Western. Agriculture dollars at UK could reflect statewide mission. Farms now excluded from space model.

IPEDS data shows research expenditures for all. IPEDS used as primary on current model run. IPEDS is lower for UK and U of L, higher for KSU.

Space Needs Model

• OFFICE SUITES

■ Other States

New Jersey	160 asf per FTE	
Utah	195 asf per FTE	Research Universities
	170 asf per FTE	State Universities, Rural Community Colleges
	150 asf per FTE	Urban Community Colleges
Texas	190 asf per FTE	Faculty
	170 asf per FTE	Non-Faculty

Space Needs Model

- **OFFICE SUITES** *(cont.)*
  - Office Suite Recommendation for Faculty and Staff Needing Offices
    Assignable Square Feet per Faculty/Staff

– Doctoral Universities	195 asf per FTE faculty/staff
– Comprehensive Universities	170 asf per FTE faculty/staff
– Community Colleges	150 asf per FTE faculty/staff
– Technical Colleges	150 asf per FTE faculty/staff

Space Needs Model

• PHYSICAL EDUCATION & RECREATION

Note: Buildings used exclusively by athletics and all athletics seating space have been removed from the model.

■ Recommendation

– Doctoral Universities	12.1 asf per undergraduate FTE student, 25% of graduate FTE student, and 15% of staff FTE
– Comprehensive Universities	12.1 asf per undergraduate FTE student, 25% of graduate FTE student, and 15% of staff FTE
– Community Colleges	Existing space only, justify proposed increases
– Technical Colleges	Existing space only, justify proposed increases

Space Needs Model

• SPECIAL USE & GENERAL USE - Other States

Note: Field buildings, food service, and merchandising facilities have been removed from the space model.

■ Utah

– Doctoral	8 asf per FTE student
– Comprehensive	10 asf per FTE student
– Community Colleges	10 asf per FTE student
– Technical Colleges	not included

Utah excluded public museums and health sciences in addition to the Kentucky exclusions. Most other models exclude these spaces.

■ Minnesota

– Comprehensive	10 asf per FTE student
– Community Colleges	15 asf per FTE student
– Technical Colleges	25 asf per FTE student

Space Needs Model

- **SPECIAL USE & GENERAL USE** *(cont.)*
  - Kentucky Actual Assignable Space per Student

– Doctoral Universities	21 asf/FTE
– Comprehensive Universities	18 asf/FTE
– Community Colleges	12 asf/FTE
– Technical Colleges	7 asf/ Headcount

  - Recommendation

Assignable Square Feet per Student

– Doctoral Universities	21 asf/FTE
– Comprehensive Universities	18 asf/FTE
– Community Colleges	12 asf/FTE
– Technical Colleges	6 asf/ Headcount

Space Needs Model

- **SUPPORT SPACE - Other States**

Note: Vehicle storage is excluded from the model.

- Utah
  - 8 asf per FTE student
- Minnesota
  - Comprehensive 6 asf per FTE student
  - Community Colleges 2 asf per FTE student
  - Technical Colleges 4 asf per FTE student

Space Needs Model

• SUPPORT SPACE *(cont.)*

■ Kentucky Actual Assignable Space per Student

– Doctoral Universities	18 asf/FTE
– Comprehensive Universities	10 asf/FTE
– Community Colleges	4 asf/FTE
– Technical Colleges	5 asf/ Headcount

■ Recommendation

Assignable Square Feet per Student

– Doctoral Universities	8 asf/FTE
– Comprehensive Universities	8 asf/FTE
– Community Colleges	4 asf/FTE
– Technical Colleges	4 asf/ Headcount

Note: UK has over 525,000 asf in this category. Most of it is storage space. Should much of that storage space be recoded as service space, e.g., office service, laboratory service, etc.?

Aggregated Model Systems

VIRGINIA

By Functional Use Code	*Allowed Space per FTE*	*Extra if Justified*
Instructional & Academic Support	42.5	7.5
Library	Justify	Justify
Research	Wet Lab 800/100K	-
	Non-Lab 450/100K	-
	For All 10/FTE Grad	-
Student Services & Instructional Support	7	3
Physical Plant - 4-year	4	3
Physical Plant - 2-year	2	1.5

Aggregated Model Systems
TEXAS
ASF/FTE

Teaching

University	- Undergraduate	45-75
	- Masters	31.5-52.5
	- Doctoral	18-30

Economy of scale for undergraduates decreases
2% for each 1,000 FTE above 15,000

Technical Colleges

45-120

Libraries

Universities
Based on ACRL and Clapp-Jordan collection projections

Collections	.10 - .07
Users	FTE students 6.25
	FTE faculty 3
Stagg	12.5% of other space

Technical Colleges

50 books per FTE
Collections .10
Study Space 6.25/FTE

Research Space

9,000 asf/$1.175M of research expenditure

Office Space

Faculty	190 asf per FTE
Non-Faculty	170 asf per FTE

or
3,500 asf/$1.175M of research expenditures, whichever is greater

Support Space

9% of space generated by the other factors

Space Quality Analysis

- Currently use USOE building condition codes
- Need process to produce similar codings for similar condition
- Review NACUBO system for quantifying building deficiencies. Requires both replacement values and deficiency cost estimates.

Space Quality Analysis

- Determine replacement value. Total project cost. Vary for major building types.
- Determine % of replacement value needed to work down the current backlog of building deficiencies.
- Determine % of replacement value needed to maintain facilities in acceptable condition.

KENTUCKY SPACE PLANNING MODEL FACTORS

Classrooms	
Doctoral	10 asf per FTE student
Comprehensive	10 asf per FTE student
Community Colleges	10 asf per FTE student
Technical Colleges*	13 asf per headcount student
Teaching Laboratories	
Doctoral	8 asf per FTE student
Comprehensive	10 asf per FTE student
Community Colleges	8 asf per FTE student
Technical Colleges*	24 asf per headcount student
Open Laboratories	
Doctoral	8 asf per FTE student
Comprehensive	8 asf per FTE student
Community Colleges	7 asf per FTE student
Technical Colleges*	45 asf per headcount student

(For Community and Technical Colleges any space coded research/non-class laboratory and related service space should be reviewed with the open laboratory category.)

* Tentative since no utilization data available.

KENTUCKY SPACE PLANNING MODEL FACTORS

Continued

Research Laboratories/Non-Class Laboratories

Doctoral	700 asf/$100,000 of R&D Expenditure
Comprehensive	700 asf/$100,000 of R&D Expenditure
Community Colleges/ Technical Colleges	Not applicable

Note: Rooms coded Research Laboratories at Community Colleges and Technical Colleges should be reviewed with Open Labs.

Office Suites

Doctoral	195 asf per FTE faculty/staff
Comprehensive	170 asf per FTE faculty/staff
Community Colleges	150 asf per FTE faculty/staff
Technical Colleges	150 asf per FTE faculty/staff

(For staffing data, skilled craft and service maintenance employees excluded. Part-time data used .33 FTE per part-time employee.)

Library

Because of the impacts of the virtual library, traditional standards do not seem applicable. Special case needs to be made for any proposed space increases.

KENTUCKY SPACE PLANNING MODEL FACTORS

Continued

Physical Education/Recreation

Doctoral/Comprehensive (minimum 75,000 asf)	12.1 asf per 100% of undergraduate FTE student, 25% of graduate FTE student, and 15% of staff FTE
Community Colleges/ Technical Colleges	Existing space used

Special Use and General Use

Doctoral	21 asf per FTE student
Comprehensive	18 asf per FTE student
Community Colleges	12 asf per FTE student
Technical Colleges	6 asf per headcount student

Support Space

Doctoral	8 asf per FTE student
Comprehensive	8 asf per FTE student
Community Colleges	8 asf per FTE student
Technical Colleges	4 asf per headcount student