

00702 Space Standards

Part 1: General

- 1.01 In 1998, the University of North Carolina (Office of the President) adopted space-planning standards for the UNC Campuses. These standards were developed to assist in predicting the space needs for selected space categories. These space-planning standards can be compared with the actual inventoried space data. From this comparison, a hypothetical surplus/deficit can be determined for the selected space categories.

The space categories identified by Office of the President include “110” Classroom Facilities; “210” Class Laboratory Facilities; “220” Open Laboratory Facilities and “300” Office Facilities. In addition, NC State has adopted a “250/255” Research Laboratory Standard and a “210” Design Studio and a “215” Design Studio Support Standard.

If you have any questions or require further information related to these Space Standards, please contact the Office of the University Architect.

Part 2: Design Guidelines

- 2.01 CLASSROOM SPACE STANDARD (110): This standard applies to “110” Classroom space only. It is defined as a room used for scheduled instruction that requires no special, restrictive equipment or configuration. It includes general-purpose classrooms, lecture halls, recitation rooms, seminar rooms, and other rooms used primarily for scheduled, non-laboratory instruction. These rooms are assigned a Program Code of 11: General Academic Instruction.

a. **Space Factor Calculation:**

$$\text{Space Factor} = \frac{\text{Student Station Size [ASF]}}{[\text{Weekly Room Hrs}] \times [\text{Student Occupancy Ratio}]}$$

Average Student Station Size: Assignable Square Feet (ASF) per student station - 18 ASF

Average Weekly Room Hours: Hours per week that the classroom is scheduled for use - 35 hours

Student Occupancy Ratio: Average percent of student stations in room being occupied during assigned classes - 65%

$$\text{Space Factor} = 18/[35] \times [65\%] = .79$$

b. **Space Factor [.79] X Student Clock Hours [Student Contact Hours] = ASF Space Required**

* Student Contact Hours from University Planning & Analysis Institutional Database.

* Definition of Student Clock Hours (Student Contact Hours): The number of weekly hours a course meets times the number of students.

NC STATE University Construction Guidelines

2.02 CLASS LAB SPACE STANDARD (210): This standard applies to “210” Class Lab space only. It is defined as a room used primarily for formally scheduled classes that require special purpose equipment or a specific room configuration for student participation experimentation, observation or practices in an academic discipline.

a. Planning/Utilization Standard: [Space Factor Calculation is same as formula for "110" Classroom shown above]

Average Student Station Size: Assignable Square Feet (ASF) per student station - Varies [See Below]

Weekly Room Hours: Hours per week that the classroom is scheduled for use = 20 hours

Student Occupancy Ratio: Average percent of student stations in room being occupied during assigned classes = 75%

b. Average Student Station Size and Resulting Space Factor by Discipline:

Category	Examples: Disciplines	ASF/Station	Space Factor
Highly Intensive	Engineering, Textiles, Applied Design, Dramatic Arts, etc.	108	7.2
Intensive	Biological & Physical Sciences, Agriculture, Architect [See Note ‘d’ below], etc.	70	4.67
Moderate Intensive	Communication, Computer/Info. Technology, Education, Psychology, etc.	50	3.33
Non-Intensive	Business, Music, Mathematics, Public Affairs, Social Sciences, etc.	33	2.2

c. Space Factor X Student Clock Hours [Student Contact Hours] = ASF Space Required

- * Student Contact Hours from University Planning & Analysis Institutional Database.
- * Definition of Student Clock Hours (Student Contact Hours): The number of weekly hours a course meets times the number of students

d. NOTE: See Class Lab (210/215) College of Design Studio Space Standard, Section 2.06.

2.03 OPEN LABORATORIES SPACE STANDARD (220): This standard applies to “220” Open Lab space only. It is defined as a laboratory used primarily for individual or group instruction that is informally scheduled, unscheduled, or open. Included in this category are: music practice rooms, language laboratories used for individual instruction, studios for individualized instruction, and computer laboratories involving specialized, restrictive software or where access is limited to specific categories of students.

a. Steps to determine the ASF (Assignable Sq Ft) required for an Open Lab Space by discipline:

Student Credit Hours (for discipline) divided by 12 hours (min. hours for full time student)
= FTEs (Full Time Equivalentents)

* Student Credit Hours from University Planning & Analysis Institutional Database

b. FTEs (for discipline) divided by Student Use Factor = Converted FTEs

* Student Use Factor is the # of students that would use the student station weekly (by discipline) (See Table below.)

c. Converted FTEs X ASF per Station = ASF Space Required

* ASF per Station: Use table under "210" Class Labs (by discipline)

DISCIPLINE:	Student Use Factor
* Architecture, Physical Science	3
* Engineering, Fine Arts	4
* Agriculture, Biological Sciences	5
* Communications, Computers & Information Sciences, Education, Psychology, Language, Mathematics, Public Affairs, Social Sciences	8
* Business Management, Letters	10

2.04 OFFICE FACILITIES STANDARDS (300's): This category includes rooms that are used as individual, multi-person or workstation space that is used by faculty, staff or students when working at one or more desks, tables or workstations. It also includes service support rooms for those offices as well as conference rooms and their service/support rooms.

1. Applies to all office space: "310" Office; "315" Office Service; "350" Conference Room and "355" Conference Room Service.

2. ASF Allowance Based on Personnel Categories:

Personnel Category	Description/Definition	Office Space Standard	Conference Office Services Standard (1)	Total ASF
Administrative	Chancellor, Vice Chancellors, Deans, Department Heads, Directors	225	50	275
Instructional & Professional	Faculty & Professional Staff (EPA non-faculty, Post Doc, etc.)	140	50	190
Technical & Clerical	Technicians, Technical Support, Clerical & other office support	90	50	140
Graduate Students	Enrolled in university research/teaching/grant assistantship	60	0	

(1) Assignable Square Footage (ASF) allowance per position for Office Services (315), Conference Rooms (350) and Conference Room Services (355).

2.05 NC STATE RESEARCH LAB STANDARD (250/255): This standard applies to “250” Research Lab and “255” Research Lab Service space. It is defined as a room used primarily for laboratory experimentation, research or training in research methods; or professional research and observation; or structured creative activity within a specific program.

a. Calculation of Research Lab Standard-

Research Units: (Headcount)		
Research Faculty	X 100%	=
Research Staff (EPA, SPA)	X 100%	=
Masters Students (thesis *)	X 80%	=
PhD Students	X 80%	=
Total Research Units		=

*For Masters Student Thesis Percentage Factors assigned to each academic discipline, please contact the Office of the University Architect.

b. Average Assignable Square Feet (ASF) per Research Unit

(includes shared lab and equipment space)

Discipline Categories	Disciplines
Intensive: 300 ASF average per research unit	Agricultural Sciences, Animal Sciences, Biological Sciences, Forestry, Engineering, Physical Sciences, Marine Sciences, Textiles, and Veterinary Medicine
Moderately Intensive: 125 ASF average per research unit	Computer Science, Design and Psychology
Non-Intensive: 15 ASF average per research unit	Education, Communications, Language, Social Sciences, Business & Economics, Mathematics and Statistics

c. Calculation of Research Lab Standard

Total Research Units X Average ASF per Research Unit = Total Required Research Space ASF

Definitions

Research Faculty: Unduplicated headcount of faculty whose salary includes research funding (110 and 122), and principal investigators and co-investigators of a sponsored program or grant.

Research Staff: Headcount of professional EPA and SPA staff who are paid in whole or in part from research funding, including appropriated research and externally funded research sources. Positions are selected using EPA title codes and SPA class codes that are deemed to engage in direct use of research lab space.

Master Students (Thesis): Headcount is based on a four year average, by discipline, of masters students enrolled in thesis degree programs.

2.06 NC STATE CLASS LAB (210/215) COLLEGE OF DESIGN STUDIO STANDARD:

This standard applies to “210” Class Labs and “215” Class Labs Service space assigned to the College of Design. They are defined as class laboratories/studios and are used primarily for individual or group instruction that is formally scheduled, unscheduled, or open.

a. Design Studio/Class Lab [210] Space Factor Calculation:

Total Studio ASF = [ASF/station] X [Average Number of Students Enrolled – Studios]

Where: ASF/station = 100

Where: Average Number of Students Enrolled – Studios = [90%] X [Total College of Design enrollment]

Total Studio/Class Lab ASF = [100 ASF] x .9[Total enrollment]

b. Design Critique (Class Lab Support) [215] Space Factor Calculation*

Total Critique/Class Lab Service ASF = [ASF per station] X [Average Number of Students Enrolled – Studios]

Where: ASF per station = 10

Where: Average Number of Students Enrolled – Studio = [90%] X [Total College of Design Enrollment]

Total Critique/Class Lab Service ASF = [10 ASF] x .9[Total enrollment]

NOTE 1: Total College of Design Enrollment = Undergraduate Students + Masters Students (excludes PHD Students).

*NOTE 2: 215 SPACE WILL BE USED AS 110 CLASSROOM SPACE WHEN NOT IN USE FOR CRITIQUES (TYPICALLY MORNINGS).

2.07 STUDY FACILITIES (400's): This standard applies to those rooms assigned to the Central Library only and have a Program Code 41: Library Services. It includes room use codes: “410” Study rooms, “420” Stack rooms, “430” Open–Stack Study rooms, “440” Processing rooms and “455” Study Services rooms.

a. Study Space = “410”[Study Rooms] + 50% of “430” [Open Stack Room] space

$$\text{Study Space ASF} = [\text{FTE Factor}] \times 25 \text{ ASF}$$

Where: FTE Factor = [20% of FTE Students] + [8% of FTE Faculty]

b. Stack Space = “420” [Stack Space] + 50% of “430” [Open Stack Study Room] space

$$\text{Stack Space ASF} = .08 \text{ ASF} \times [\# \text{ of Volumes by category}] / [\text{Adjustment Factor}]$$

<u># of Volumes</u> =	Category	[Adjustment Factor] *
	Books	1
	Microforms	80
	AV Material	5
	CartoMaterials	8
	Govt Materials	8
	Graphic Materials	8
	Mach Read	8
	Other Materials	8
	Serial Sub.	8

(*) Category is divided by Adjustment Factor

c. Service Space includes “440” [Processing Room] + “455” [Study Service Space]

$$\text{Service Space ASF} = 15\% \times ([\text{Study Space ASF}] + [\text{Stack Space ASF}])$$