NC State University Design and Construction Guidelines
Division 00 Planning & Design - Space Standards & Programming

1.0 Purpose

A. These guidelines define the NC State space standards which are the basis of all programming documents. The NC State space standards assist in developing the space needs by space type. NC State adopted revised space standards as part of the Physical Master Plan process in 2023.

B. The program compares the space planning standards with existing inventoried space data and proposed space data. From this comparison, a surplus/deficit can be determined for the selected space categories. All space is evaluated using Assignable Square Footage (ASF).

2.0 Space Standards

A. Classroom Space Standard (110)

1. A "110" classroom is defined as a room used for scheduled instruction that requires no special equipment or configuration. It includes general-purpose classrooms, lecture halls, seminar rooms, and other rooms used primarily for scheduled, non-laboratory instruction. Utilization is analyzed at a university level.

2. Space Factor Calculation: 25/ (35 x 75%) = .95

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

a) Average Student Station Size: Assignable Square Feet (ASF) per student station. Standard is an average across campus of 25 ASF.

b) Average Weekly Room Hours: Total hours of instruction in classrooms divided by the total number of classrooms. Minimum standard of 35 hours.

c) Student Occupancy Ratio: Average percentage of student stations in room being occupied during assigned classes. Minimum standard of 75% filled.

B. Class Laboratory Space Standard (210/215)

1. This standard applies "210" Class Lab and "215" Class Lab Service spaces used primarily for formally scheduled classes that require discipline-specific equipment or room configuration, for student participation, experimentation, observation or practices in an academic discipline. Utilization is analyzed on a college or academic unit level. The below calculation does not apply to College of Design Studio Space.

2. Space Factor Calculation:

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

a) Average Student Station Size: Assignable Square Feet (ASF) per student station = varies (see below)

b) Average Weekly Room Hours: Total hours of instruction in classrooms divided by the total number of classrooms. Minimum standard of 24 hours.

c) Student Occupancy Ratio: Average percent of student stations in room being occupied during assigned classes = Minimum standard of 80%.

d) Space Factor = varies (see below)

Category	Examples	ASF/ Station	Space Factor
High Intensity	CALS: BAE, BIT, Biochemistry COE: BME, BTEC, CCEE, CBE, ISE, MAE, MSE, NE COS: Chemistry Wilson College of Textiles Dramatic Arts	80	4.2
Moderate Intensity	CALS: Plant, Animal, and Food Sciences College of Education CNR: All Natural Resources except GIS CHASS: Sociology & Anthropology COS: Biological Sciences, Physics, MEAS College of Veterinary Medicine	60	3.1
Low Intensity	CALS: Social Sciences COE: CSE, ECE, Clean Tech, IES, EOL CNR: GIS CHASS: All except Sociology & Anthropology COS: Mathematics & Statistics Poole College of Management Music	35	1.8

C. Class Lab (210/215) College Of Design Studio Standard

1. 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.

2. Design Studio/Class Lab Space Factor Calculation:

$$\text{Total Studio ASF} = \frac{\text{ASF}}{\text{Station}} \times \text{Average Number of Enrolled Students: Studios}$$

a) ASF/station = 100

b) Average Number of Students Enrolled: Studios = 90% X Total College of Design Enrollment.

c) Example: Total Studio/Class Lab 13,500 ASF = 100 x .9(150).

3. Design Critique (215 Class Lab Support) Space Factor Calculation:

$$\text{Total Critique/ Class Lab Service ASF} = \frac{\text{ASF}}{\text{Station}} \times \text{Average Number of Enrolled Students: Studios}$$

a) ASF per station = 10

b) Average Number of Students Enrolled: Studio = 90% X Total College of Design Enrollment.

c) Example: Total Critique/Class Lab Service 1,350 ASF = 10 x .9(150). Space will be used as 110 Classroom space when not in use for critiques (typically mornings).

4. Total College of Design Enrollment = Undergraduate Students + Masters Students (excludes PHD Students).

D. Open Lab Standard (220)

1. This standard applies to "220" Open Labs used for discipline-specific activities or self-directed student work; not primarily scheduled instruction. This includes makerspace, student project space, computer labs, and student research wet labs.

2. Space Factor Calculation:

$$\text{Open Lab ASF} = \text{Space Factor} \times \text{Undergraduate Student FTE}$$

a) Space Factor for High Intensity = 5.0 (CALS, COE, CNR, COS, WCOT, CVM)

b) Space Factor for Low Intensity = 2.5 (COD, CED, CHASS, PCOM, DASA)

E. NC State Research Laboratory Standard (250/255)

1. The "250" Research Lab and "255" Research Lab Service spaces are defined as rooms used primarily used for laboratory experimentation, research or training in research methods; or professional research and observation; or structured creative activity within a specific program.

2. Research Faculty Calculation:

   a) Research Faculty: Unduplicated named, tenured, or tenure-track faculty headcount (JCAT 2A or 2B) whose salary includes research funding (110 or 122). Review is based on a historical three-year average.

   b) Average Assignable Square Feet (ASF) per Research PI (Includes Research Lab, Shared Lab and Equipment/ Support Spaces used by faculty, staff, post docs, and students)

   c) Core Facility of additional 5% research space for colleges with shared research facilities (CALS, COE, CNR, COS, WCOT).

Categories	per Research PI team	College
NWI, TPACC, BTEC	Reviewed Separately	WCOT: Nonwovens Institute, Textiles Protection & Comfort Center COE: Biomanufacturing Training & Education Center
Physical Sciences/ Textiles/ Engineering	Avg of 1400 ASF	CALS: Biochemistry COE: CBE, MSE COS: Chemistry, Physics, MEAS WCOT: All Textiles except NWI, TPACC
Life Sciences / Engineering	Avg of 1200 ASF	CALS: Plant, Animal, and Food Sciences COS: Biological Sciences COE: BME, MAE, CCEE, ISE, NE, ECE (split below) College of Natural Resources College of Veterinary Medicine
Psychology / Computer Science	Avg of 400 ASF	CHASS: Psychology COE: Computer Science, ECE (split with Life Science)
Design	Avg of 200 ASF	College of Design
Education	Avg of 80 ASF	College of Education
Computational / Humanities	Avg of 40 ASF	CALS: Social Sciences CHASS: All CHASS except Psychology COS: Mathematics & Statistics Poole College of Management

F. Office Facilities Standards (300s)

1. This category includes spaces that are used for office and office support. This includes: workspace as individual, multi-person or open-office workstation space as well as service support rooms for reception, suite circulation, break, file, storage, print /copy, departmental mail, conference and their service/support rooms. This standard applies to all spaces coded as the following: "310" Office; "315" Office Service; "350" Conference Room and "355" Conference Room Service.

Personnel Category	Description/Definition	Target "310" ASF (b) for Desk/Office	Total Programming ASF for Office & Support
Chancellor	Chancellor		450
Administrative	Provost & Vice Chancellor	180	270
	Dean	180	270
	Vice Provost/ Assoc. VC/Dean	160	240
	Dept. Head / Assist. VC/Dean	160	220
Faculty & Staff	Faculty	120	180
	Professional Staff	50-115	180
	Technical / Admin Support	50	140
	Post Doc	50	120
House Officers	House Officers	36	60
Graduate Students	Research/Teaching/Grant Assistantship	36	60

a) Programming ASF for planning purposes: the Assignable Square Footage (ASF) amount per position from which all office and office support space shall be allocated; includes Personal Workspace (310), Office Services such as file, storage, print/copy, etc. (315), Conference Rooms (350) and Conference Room Services (355).

b) Target "310" ASF for desk or office space: the target ASF for a typical workspace per position.

c) The total Programming ASF is the maximum ASF allowed for all Office Facilities 300 space.

G. Study Facilities (400s) – University Libraries Only

1. This standard applies to those rooms assigned to the University Libraries 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.

2. Study Space Factor Calculation

   a) Space Factor = "410"Study Rooms + 50% of "430" Open Stack Room space

   b) Study Space ASF Standard is 25 ASF per station for (10% of FTE Undergraduate Students + 10% of FTE Graduate Students).

3. Stack Space Factor Calculation

   a) Space Factor = "420" Stack Space + 50% of "430" Open Stack Study Room space.

   b) Stack Space ASF Standard is .08 ASF per (# of Volumes by category) / (Adjustment Factor)

# of Volumes =

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

4. Service Space

   a) This category includes "440" Processing Room and "455" Study Service Space.

   b) Service Space ASF Standard is 15% of (Study Space ASF + Stack Space ASF).