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# **WAKE FOREST UNIVERSITY**

## **Space Planning Guidelines**

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## ***Wake Forest Space Planning Guidelines and Calculations***

### ***Overview***

The Wake Forest space needs model generates needs for each department or unit consisting of an office need calculation; a laboratory need calculation for academic units (teaching labs, research labs and computer labs), classrooms, student lounges, and other needs by space type such as media, demonstration, clinics, greenhouses, etc. However, not all units will have these “other” types of space need. The space needs model also addresses certain types of space on a “campus wide basis”. Generally these types of spaces are considered to be institutional resources that are used and available to most of the university population. These space types include; athletic /PE/ recreation; and campus support facilities (such as physical plant shops, central storage and data processing areas). The guidelines detailed in the following pages are therefore divided into departmental and campus wide categories and are further separated by room type.

The space needs model does not include all types of space or operations. The model excludes non-assignable space (i.e. corridors, mechanical rooms, restrooms), any space located in residence halls, laboratory schools, and non-university operations such as business incubators. Specific room types exempt from the space needs model include all rooms with a “X”, “Y” or “W” room type (non-assigned space) - custodial, building mechanical, building circulation space, restrooms etc.), all rooms with a “9xx” room type (residential space) along with any other residential-related space located within a residence hall (i.e., lounges, offices, libraries). In addition athletic seating (room type 523), food service (room type 63x) and merchandising (room type 66x) have also been exempted.

## ***Space Needs Formulae and Criteria***

### **Office Space**

#### **A. Office Guidelines**

Office facilities are individual, multi-person, or workstation space, plus support spaces including lounges, reception and waiting areas, conference rooms, and service areas for copiers and files.

The office space needs consist of two parts: 1) office space and 2) office support – lounge space, conferencing space and service space. The office service recommendations are outlined in the following section.

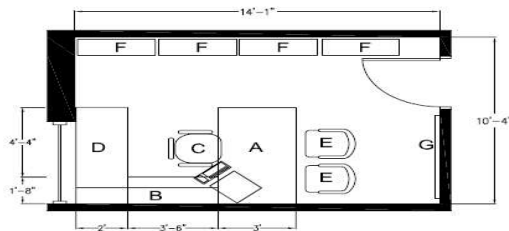
The office space need is determined by multiplying the number of FTE personnel by position by a module (office size in square feet) appropriate for that position. The office guidelines presented below are divided into twelve modules that specify the office requirement by position type. This approach varies from most other guidelines by specifying needs by position type especially for senior administrative positions. A more accurate office needs profile may be developed by this detailed approach by recognizing different levels of responsibilities and therefore larger office requirements of senior administrators.

Position	Office Size (ASF / FTE)	Position	Office Size (ASF / FTE)
President	450	Research Scientist	150
Provost / Vice President	325	Staff	140
Deans / Asst VP	240	Clerical / Technician	120
Directors/ Chairs	225	Post Docs	120
Asst / Assoc Directors	220	Grad Students	90
Faculty	120	Student Worker	25

For some disciplines such as art and music, research activity may be performed in the office area. Therefore the offices will be larger than a standard faculty office. Research labs may not be required in those disciplines. CFP recommends expanded faculty office modules for Art-240 ASF, Music-225 ASF and Architecture-180 ASF to address these studio/research needs. Office layout examples are provided below.

Faculty Office

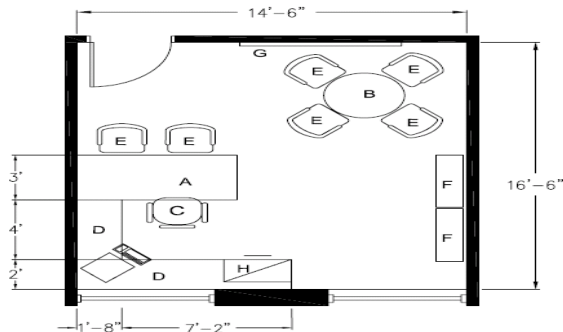
120 ASF



- A. DESK/WORK SURFACE
- B. OVERHEAD STORAGE W/ TASK LIGHTS
- C. EXECUTIVE CHAIR
- D. CREDENZA/WORK SURFACE
- E. VISITORS CHAIRS
- F. FULL HEIGHT BOOKCASES
- G. WHITE BOARD

Dean's Office

240 ASF



- A. DESK/WORK SURFACE
- B. CONFERENCE TABLE
- C. EXECUTIVE CHAIR
- D. CREDENZA/WORK SURFACE
- E. VISITOR CHAIRS
- F. FULL HEIGHT BOOKCASES
- G. WHITE/BULLETIN BOARD
- H. TWO DRAWER FILE (BELOW WORK SURFACE)

## B. Office Support Guidelines

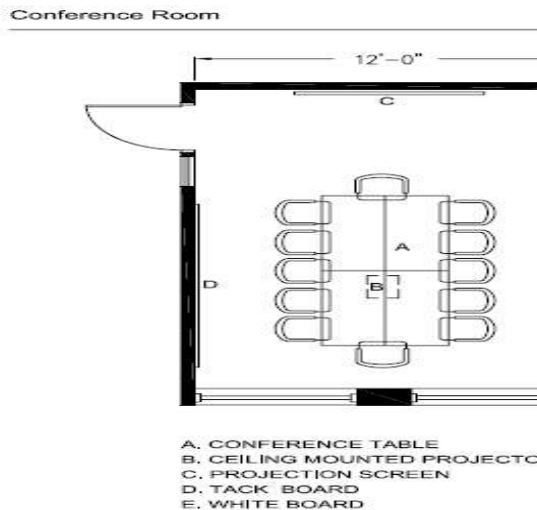
### Office Service

Typical office service space needs (areas for files, non-staffed waiting areas, copy machines, supply storage, etc.) are based on a percent of the total calculated office space required for a department, college or unit. For most academic departments and administrative units ten percent (10%) is used whereas for some larger administrative units such as colleges or senior administrative offices 20 percent (20%) is used. For other administrative departments, fifteen percent (15%) should be used.

Certain office functions also have special service needs that are supplemental to the above guidelines. These additional needs are specific to certain units and include waiting rooms, processing rooms and departmental storage. Departments which have high daily client traffic (i.e., senior administrative offices, student services operations) may require an expanded waiting room area. A waiting room module of 120 ASF for most administrative offices should be used, while needs for student service operations are based on a factor of .02 ASF/Student FTE plus a 150 ASF minimum. Other units may need special processing areas for assembling and distributing materials. A module of 500 ASF is recommended for processing rooms. A third special need is departmental storage for operations required to maintain and store records or files for extended periods such as human resources or the controller's office. A factor of 15 ASF per department FTE staff is recommended.

### Conference Rooms

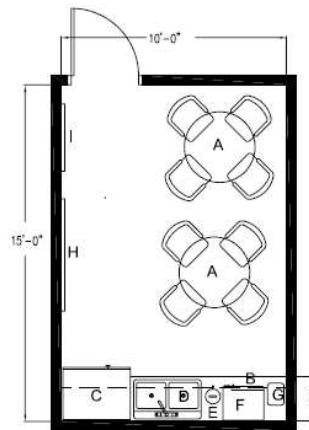
Each department should contribute to a conferencing space need. This space is calculated based on 18 ASF per number of faculty and professional staff personnel. This is an average and the actual ASF per station will vary depending on the size of the conference room. In some cases the calculated need may generate an amount of space that is not functional. In these cases it is assumed that departments located in the same facility may combine their needs and share space.



## Office Lounges

Office lounge space is calculated based on the number of regular personnel (excluding graduate students and student workers) in a department or unit times 5 ASF. In some cases the calculated need for smaller units may generate an amount of space that is not functional. In these cases similar sized departments located in the same facility may combine their needs and share space.

Staff Lounge 150 ASF



- A. TABLE
- B. COUNTER
- C. REFRIGERATOR
- D. SINK
- E. COFFEE MAKER
- F. MICROWAVE
- G. RECYCLING
- H. WHITE BOARD
- I. TACK BOARD

## Instructional Laboratories Guidelines

While an ASF / FTE figure may give a good idea as to the total amount of class lab space that may be required at an institution, these guidelines apply a detailed calculation based on the disciplines offered by the University and the amount of time required for the lab use. Therefore the following formula and factors are applied. The station size (module) for the various disciplines has changed over the years as technology and the method of teaching/learning changes.

### Formula for Calculating Teaching Laboratory Space

The required laboratory ASF is determined by the multiplying the space factor by a calculated WSCH. The space factor formula used for class labs is:

$$\text{Space factor} = \frac{\text{Station Size (Module)}}{\text{Hrs. per Week (WHR)} \times \text{Occupancy Rate (Station Use)}}$$

The space factor is then multiplied by the Weekly Student Contact Hours (WSCH) to produce the total ASF required for laboratories.

At most universities the WSCHs for laboratories are always underreported for numerous reasons. Therefore, a conversion factor is applied to the credit hours generated by each discipline to calculate the WSCHs for laboratories for each discipline. The factor can range from 0.0 (no class lab use) for courses such as Business, Economics & Philosophy to 1.5 for Architecture and Art. Those disciplines with a “0” class lab use normally use computer labs or project rooms, which are described in the following paragraphs.

<b>Guidelines (Examples)</b>	<b>WRHs</b>	<b>Station Use</b>	<b>ASF / Station (Module)</b>
The assignable square feet (ASF) needed for laboratories are based on the discipline. Examples of the space factor for the various types of laboratories are:			
	22	80 %	65
	15	90 %	40
Biology -----	22	80 %	100
Computer -----	18	90 %	80
Electrical Engineering -----	15	80 %	60
Fine Arts -----			
Nursing -----			

**Module Size (ASF / Station)**

The teaching lab module (station size) varies by discipline (CIP code). The lab module size ranges from 30 ASF per station for disciplines such as Languages and Linguistics to 150 ASF per station for Dance. For example, a general biology lab with 24 stations with prep room would contain approximately 1,400 ASF (60 x 24).

**Weekly Room Hours (WRH)**

With Wake Forest the total day time available for laboratory work is normally 43 hours. The period of time is Monday thru Thursday from 8 AM to 5 PM and Friday from 8 AM to 2 PM. Normally it is assumed that labs should be used 50 percent of the time. This allows for set-up time and open use. Using Biology as an example, it is assumed that 22 hours of these 43 are available for scheduled activity. The remaining time (21 hours) is available for setting up lab classes and non scheduled lab use. The WRHs used in these calculations range from 15 for disciplines such as Architecture (open use requirements), Nursing (limited time available for lab work due to requirements in other facilities such as clinics) and Chemistry (longer set-up time requirements) to 22 WRHs (for the majority of the other disciplines).

**Determining Contact Hours (Periods of Use) for Teaching Laboratories**

The amount of space required for teaching laboratories is driven in part by the room use. This use is determined by the number of Weekly Student Contact Hours (WSCH) or time spent by the students in scheduled courses. While this information can be obtained from the Class File (courses scheduled) normally for classrooms, not all universities have a complete file for all the laboratory use. Therefore a conversion table has been established to determine the number of Weekly Student Contact Hours (WSCH) for each type of teaching or class lab.

The contact hours for classrooms and laboratory use are calculated using the classroom percent (CLSRM %) and the teaching lab percent (TL %). This factor is multiplied by the number of credit hours for a particular course or discipline.

For example general chemistry (CIP 400501) listed in the course catalog is normally a 4 credit course sequence with 3 hours (periods) of lecture and 3 hours (periods) of scheduled lab use. Therefore for each credit hour a factor or percent (3/4 or .75) is used to determine the contact hours (in most cases this is a 50

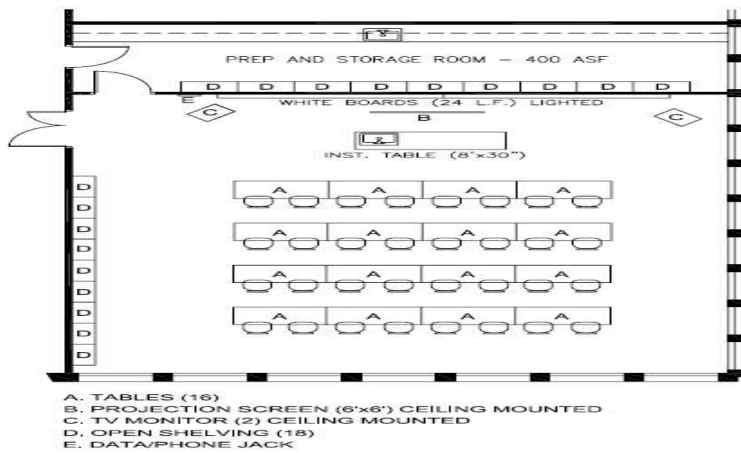
minute period) spent in both classrooms and in teaching labs (4 credit hours x .75 = 3 periods or contact hours) for both classrooms and laboratories.

Each major discipline will also vary in the length of time spent in classrooms and/or laboratories. For example general biology will require slightly less time than general chemistry in both classrooms and laboratories. Therefore the general biology factors are .65 for classrooms and .60 for laboratories. On average for a 4 credit course, a student would spend approximately 2.5 periods or contact hours in both classrooms and in laboratories. (4 x .60 = 2.4 contact hours).

The following diagrams illustrate typical Biology, Geology and Chemistry lab layouts using the factors described above.

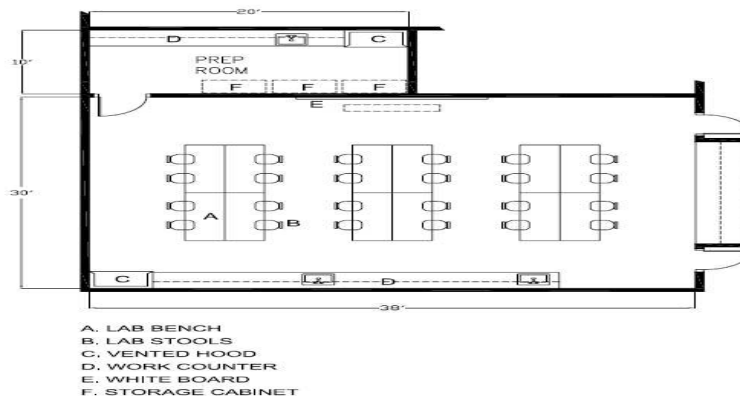
Geology Teaching Laboratory - Capacity 32

1,200 ASF



Biology Teaching Laboratory - Capacity 24

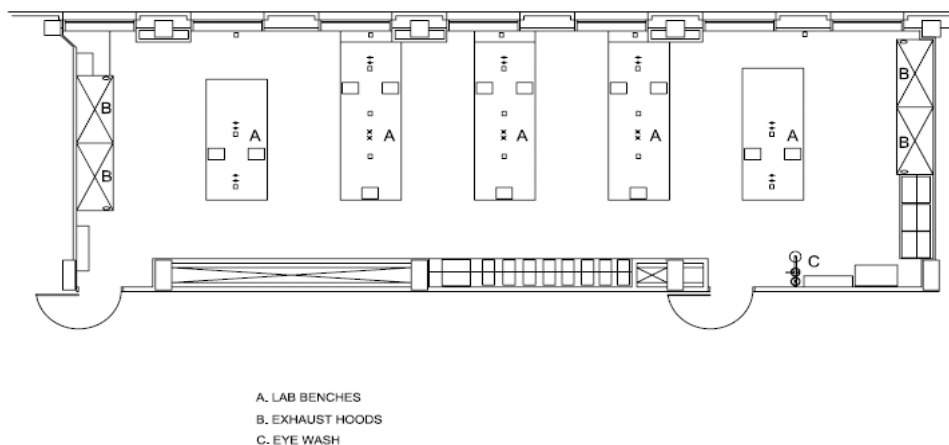
1,340 ASF





Chemistry Teaching Laboratory - Capacity 24

1,476 ASF



These layouts of teaching labs provide examples of what the labs may look like using the factors recommended for teaching labs. For example the Biology lab shown here provides 56 ASF per station while the Geology lab has 50 ASF per station and the Chemistry lab has 61 ASF per station plus another 125 ASF for a prep room support. Factors used in these space needs calculations are based on averages. Some labs will be smaller; some will be larger than the examples provided above.

## Research Laboratory Guidelines

A room used primarily for laboratory experimentation, research or training in research methods; or professional research and observation; or structural creative activity within a specific program.

The method used for calculating research lab space is based on the percent of master and doctoral students, the percent of technicians, the percent of faculty, and number of research scientists conducting research at a given time by a module for each discipline. A periodic survey of colleges or departments to ascertain the lab-based personnel data is to be conducted to update this data. *Note: The process provides a method for including an allocation of research space for undergraduate students. The FTE undergraduate students conducting research is multiplied by a prorated module of one-third the typical module used for other researchers.*

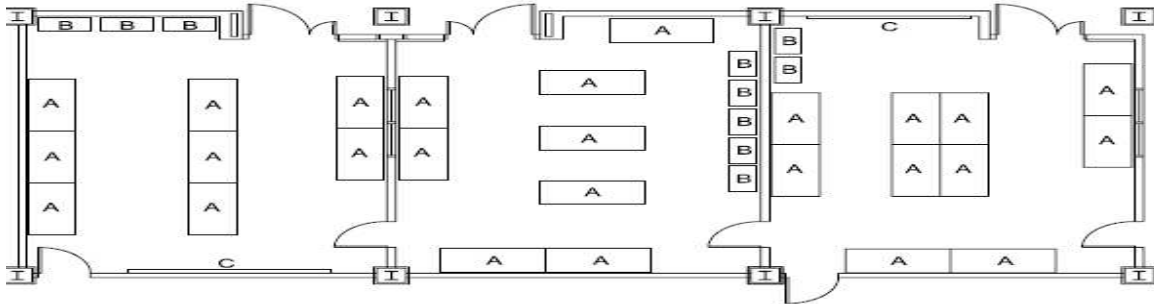
The research lab module is the amount of space allocated for each researcher. A research lab normally houses a number of researchers. For example, a faculty member doing research may have a post doc and two graduate students conducting research in the lab. Therefore on average the core lab size would be 1,200 ASF (4 times the 300 ASF module). If there is a need for specialized equipment such as a room housing an NMR, the space is classified separately as a special use lab. A faculty member with several large grants could have several research labs depending on the number of researchers involved.

For selective disciplines part of the research lab calculation also includes an allocation for special use space. Special use labs are usually spaces that are not assigned to a specific faculty or researcher and likely are a shared space. These areas are functionally unique usually because of specialized equipment. Examples of these types of spaces include wind tunnels, wave tanks, electron microscopy rooms, NMR rooms, etc. A supplemental space module is allocated for special use space, typically 20% of a full research lab module. This module is then multiplied to the number of researchers conducting lab-based research to generate the special use allocation.

Examples of research lab layouts are provided below:

Mechanical Engineering Research Laboratories

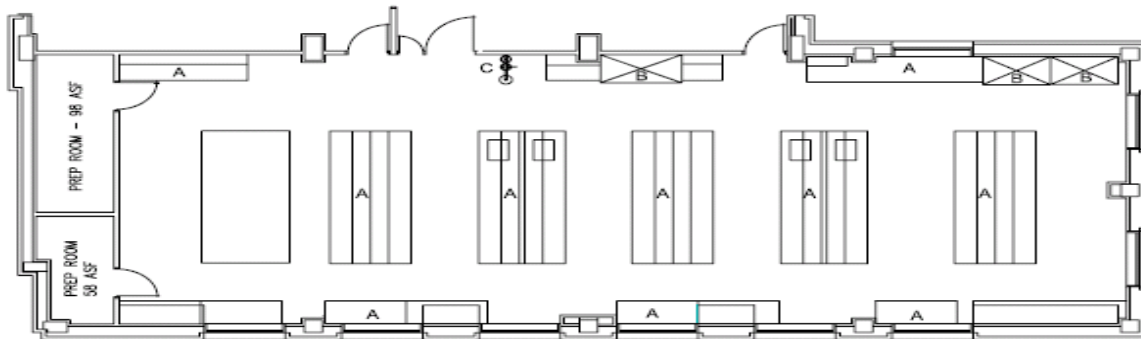
1,775 ASF



A. TABLE (72" x 33" EACH)  
 B. STORAGE CABINET  
 C. WHITE BOARD

Chemistry Research Laboratory - Capacity 7

2,145 ASF



A. LAB BENCHES  
 B. EXHAUST HOODS  
 C. EYE WASH

These layouts of research labs provide examples of what the labs may look like using the factors recommended for research labs. For example both the Mechanical Engineering lab and the Chemistry lab shown here provide nearly 300 ASF per researcher. Factors used in these space needs calculations are based on averages. Some labs will be smaller; some will be larger than the examples provided above.

## Classroom Guidelines

A room used for classes and not tied to a specific discipline or subject by the equipment in the room or the configuration of the room. Lecture halls, seminar rooms, and general-purpose classrooms are included here.

	WRHs *	Station Fill	ASF / Station **
Standard Classroom	25	65 %	20

\* This is the average hours per week classrooms should be used.

\*\* Includes classroom service (115)

The space factor formula used is:

$$\text{Space factor} = \frac{\text{Station size}}{\text{Hrs. per week} \times \text{Occupancy Rate}}$$

The space factor is then multiplied by the Weekly Student Contact Hours (WSCH) to produce the ASF required for classrooms.

For example:

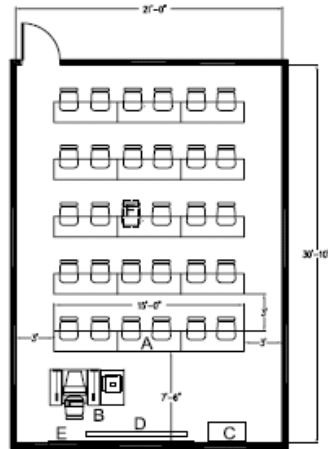
$$\frac{20}{25 \times .65} = 1.23 \text{ factor}$$

Therefore 6,000 WSCHs would require 7,380 ASF of classroom space (1.23 x 6,000).

This formula calculates the total classroom space requirements. While the average station size being used is 20 ASF, the University will require a wide variety and size of classrooms. Some rooms may be 15 ASF per station, others may be 30 ASF or higher per station. The average station size reflects current conditions, and recognizes recent trends in instruction based on more group discussion and to provide greater flexibility in room furnishings and layouts to accommodate a variety of learning methods. The recommended weekly hour usage rate represents current scheduling conditions as well. The following layouts provide examples of various classrooms.

Classroom - Capacity 30

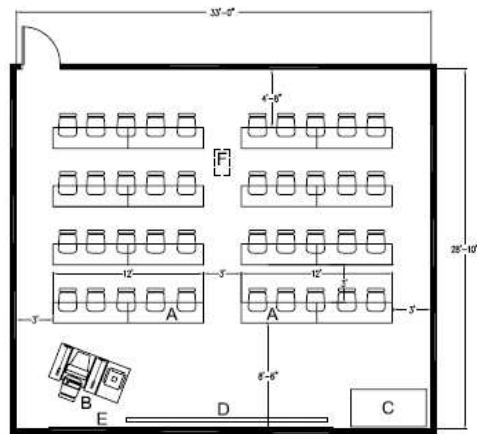
647 ASF



- A. TABLE/ CHAIR
- B. INSTRUCTOR WORKSTATION
- C. LAYOUT TABLE
- D. PROJECTION SCREEN
- E. WHITE BOARD
- F. CEILING MOUNTED PROJECTOR

Classroom - Capacity 40

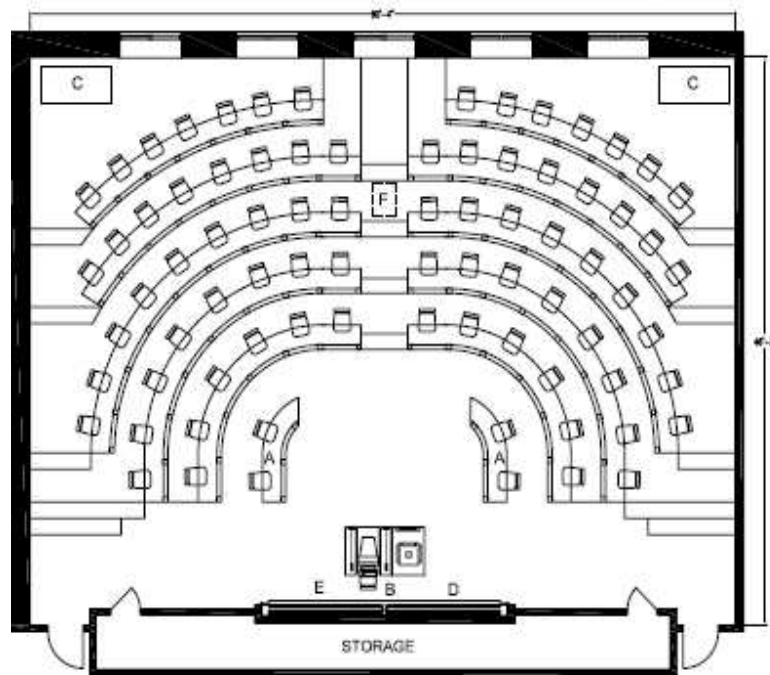
950 ASF



- A. TABLE/ CHAIR
- B. INSTRUCTOR WORKSTATION
- C. LAYOUT TABLE
- D. PROJECTION SCREEN
- E. WHITE BOARD
- F. CEILING MOUNTED PROJECTOR

Classroom - Capacity 80

2,737 ASF



- A. FIXED SEATING
- B. INSTRUCTOR WORKSTATION
- C. LAYOUT TABLE
- D. PROJECTION SCREEN
- E. WHITE BOARD
- F. CEILING MOUNTED PROJECTOR

## **Project Rooms**

Project rooms have never been considered in previous guidelines. This is a room or group of rooms used by faculty and/or students to complete projects or assignments outside of a formal or regularly scheduled instructional facility such as a classroom or laboratory. These rooms are usually open and accessible at any time of the day for one or more persons to use to complete projects assigned during a class. These rooms are typically furnished with tables and chairs so that students may work in groups. Other equipment such as computers and printers may also be provided. These rooms have become an important part of the educational delivery system for several disciplines including Economics, Engineering, Finance, History, Management, Marketing, Public Administration, & Sociology. Normally a room of approximately 250 ASF is allotted for faculty and students to work on projects relating to their academic discipline, but this module may vary by discipline. For some departments this space is used as their research area. The space needs for Project Room space includes all non-exempt space classified under room type 280-Project Room.

## **Media**

The space needs for Media space includes all non-exempt space classified under room types 530-Media and 535-Media Service. For departments requiring this type of space a minimum of 1,500 ASF plus a space factor of 0.1 ASF / student credit hour is used. This space is usually assigned to Communication, Radio/TV, and Visual Arts departments. For administrative units, such as printing services, or units not generating credit hours that are assigned Media space the space assigned is assumed to be sufficient and a need is not calculated, but may be adjusted based on an independent assessment and justification.

## **Clinic**

The space needs for Clinic space includes all non-exempt space classified under room types 540-Clinic and 545-Clinic Service. For departments requiring this type of space such as psychology and speech & hearing, a minimum core of 1,000 ASF plus a factor of 0.1 ASF / student credit hour is used. For administrative units that are assigned Clinic space a need is not calculated, and the space assigned is assumed to be sufficient, but may be adjusted based on an independent assessment and justification.

## **Demonstration**

The space needs for Demonstration space includes all non-exempt space classified under room types 550-Demonstration and 555-Demonstration Service. For departments requiring this type of space such as education, consumer sciences, and culinary programs, a minimum core of 2,500 ASF plus a factor of 0.1 ASF / student credit hour is used. For administrative units that are assigned Demonstration space a need is not calculated, and the space assigned is assumed to be sufficient, but may be adjusted based on an independent assessment and justification.

## **Greenhouses**

The space needs for Greenhouse space includes all non-exempt space classified under room types 580-Greenhouse and 585-Greenhouse Service. For departments requiring this type of space such as biological sciences, a factor of 5 ASF / student credit hour is used. For administrative units that are assigned Greenhouse space a need is not calculated, and the space assigned is assumed to be sufficient, but may be adjusted based on an independent assessment and justification.

## **Student Lounge**

Student lounge space includes areas used for rest and relaxation used primarily by students. This category does not include lounge space located in residence halls or offices.

The space needs for Lounge space includes all non-exempt space classified under room types 650-Lounge and 655-Lounge Service. The calculation for Lounges is 2 ASF / Student FTE. Lounge space for faculty and staff is calculated under the Office category (300). Note: student lounge space assigned to

administrative support areas will be reviewed on a case by case basis and are not included in this formula-based assessment.

## **Assembly**

This category of space is normally divided into two groups: Assembly (610) and Exhibition (620) space and those room types that are considered as Student Service space (630, 650, 660, 670, & 680). CFP proposes a more detailed approach than most other methods used by other states and universities. This method provides a more realistic approach since it provides formulas and factors based on individual room types rather than consolidating all the General Use room types into one or two groups.

The Assembly space category consists of rooms designed and equipped for the assembly of many persons for such events as dramatic, musical or commencement activities, including theaters, auditoria, and concert halls.

The space needs for Assembly space includes all non-exempt space classified under room types 610-Assembly and 615-Assembly Service. The calculation for Assembly space includes a core minimum of 21,000 ASF plus 4 ASF/Student FTE.

## **Exhibition**

The space needs for Exhibition space includes all non-exempt space classified under room types 620-Exhibition and 625-Exhibition Service. The calculation for Exhibition space is a core of 1,500 ASF plus 1 ASF / Student FTE.

## **Meeting Rooms**

Space used by the institution or public for a variety of non-class meetings or activities.

The space needs for Meeting Room space includes all non-exempt space classified under room types 680-Meeting Rooms and 685-Meeting Room Service. The calculation for Meeting Rooms is 1 ASF / FTE student, faculty, and staff.

## **Health Care Facilities**

Health care facilities include space for patient care that are located in separately organized health care facilities such as student infirmaries or clinics. For purposes of this space needs calculation teaching hospital, medical school, or veterinary clinic facilities are excluded.

The space needs for Health Care space includes all non-exempt space classified under room type series 800. A minimum amount of space should be provided for health care on each campus. A factor of 0.5 ASF / Student FTE student is used with a minimum of 2,000 ASF.

## **Spaces Not Calculated**

Due to special or unique characteristics of certain types of spaces, the formula-based model is not applicable. These spaces are recognized in the model as a need whereby the current square feet assigned to the department is assumed to be sufficient. Therefore, the current space is reported as the “need” in the detailed calculation report.

## **Campus Wide Space Needs**

The calculation of space needs for certain types of space considered to be campus wide resources that are generally used or supportive to the institution as a whole have been consolidated to determine an aggregate need for the total campus. The following room types are consolidated in order to calculate a total campus space need.

## **Athletic / Physical Education/Recreation**

The campus wide space needs for Athletic/PE/Recreation space includes all non-exempt space classified under room types 520-Athletic/PE; 525-Athletic/PE Service and 670/675-Recreation. Athletic/PE. Spectator Seating – Room Type 523 is classified as exempt space in the model. The method used for calculating Athletic / PE/ Recreation space provides a core minimum of 50,000 ASF plus 6 ASF / Student FTE over 2,000 students. For intercollegiate activity space, an additional 2 ASF / Student FTE is added to the above allocation. The method proposed for Athletic / PE space is a core minimum of 50,000 ASF plus 8 ASF / FTE. This space is typically assigned to Student Services or similar office. Seating in arenas and stadiums (room type 523) are excluded from this calculation.

## **Support Facilities**

Support facilities provide centralized space for various auxiliary support systems and services of an institution and include centralized areas for computer based data processing and telecommunications, shop services, general storage and supply, vehicle storage, central services such as printing, mail, shipping and receiving, etc.

The campus wide space needs for Support space includes all non-exempt space classified under room types 710/715- Central Computer facilities, 720/725- Shop, 730- Central Storage, 731- Departmental Storage, 740/745- Vehicle Storage, 750- Central Service, and 760- Hazardous Waste Storage.

The calculation for Support Facilities is a percentage allowance of 7.5 % of all other calculated space with a minimum of 25,000 ASF.

## **Library**

Library space includes study rooms, stacks, open-stack study rooms, and processing areas as well as service areas. Individual offices are coded as office facilities. Reading/study space includes tables, carrels, or chairs where students and faculty can work. Service space includes binding, cataloging, re-shelving, reserves, and circulation space.

The calculation of Library space is addressed differently than the other campus-wide calculation categories. This space type is more specialized and a significant part of the basic data needed to conduct this calculation is solicited separately from the institution.

The space needs for Library space includes all non-exempt space classified under the 400 room types series for Library assigned to the institution's main library unit. Library space assigned to other departments is not calculated in the model and is assumed to be sufficient, or should be assessed independently on a case-by-case basis. The following factors and criteria are used in the calculation of main library space:

**Stack: Stack:** space needs are based on the reported collections that are converted to bound volume equivalents and then allocated space based on the following factors: 10 ASF / volume for first 150,000 volumes; .09 ASF / second 150,000 volumes; .08 ASF / next 300,000 volumes; .07 ASF / all volumes over 600,000. Compact shelving, if applicable, is .03 ASF / volume.

**Reading/Study Rooms:** Ten percent (10%) of FTE students and five percent (5%) of FTE faculty require seating at any one time. The station size varies depending on the type of station: casual seats (20 ASF),

Computer station (30 SF), reserved (40 ASF), etc. For simplification, a composite student reading space module of 26.75 ASF and a faculty reading space module of 29.5 ASF have been used.

**Lounge Area:** Two (2) ASF per user is applied to the total calculated number of library users determined for the reading space ( FTE students and faculty) to allow for lounge facilities where food and drink such as cyber cafes are permitted.

**Service:** an allocation of 20 % of the calculated need for Reading/Study and Stack space is added to the total need.

Office space needs are calculated under Offices (300) and the office requirement is included in calculating the total library space requirements.

For other academic or administrative units that are assigned library space a need is not calculated in the model, and the space assigned is assumed to be sufficient.



## ***Glossary of Terms***

The terms and abbreviations used in this report are defined below:

**ASF (Assignable Square Feet):**

This is the area (square feet) assigned to, or available for assignments to an occupant or specific use. This excludes building service areas such as public restrooms and custodial closets, circulation, mechanical, and structural areas.

**CIP Code:**

The Classification of Instructional Programs (CIP) code is a taxonomic scheme that supports the accurate tracking, assessment, and reporting of fields of study and program completions activity. CIP was originally developed by the U.S. Department of Education's National Center for Education Statistics (NCES) in 1980. The 2000 edition (CIP-2000) is the third revision of the taxonomy.

**Credit Hours:**

This is a unit of measure representing the equivalent of an hour (normally 50 minutes) of instruction per week over the entire term or semester.

**FTE (Full Time Equivalent) Student:**

For FTE students this is the total credit hours generated within any semester, quarter, or inter-session, divided by 15 for undergraduates and 12 for graduate students. Credit hours generated are calculated based on the academic program in which the student is enrolled and is taken within the official enrollment reporting date for a defined period (normally this is the 14<sup>th</sup> day of the Fall semester or quarter).

For FTE faculty this includes all faculty, instructors and above, that have 50 percent or higher contract plus the FTE equivalent for those under 50 percent.

**Module Size (ASF / Station):**

The average classroom module is 20 however this will vary by type of room. Seminar rooms are normally 25 to 30 ASF per station while lecture halls have between 9 and 13 ASF per station. The teaching lab and research lab modules will vary by discipline (CIP).

**Station Use (Occupancy):**

This is the percent of stations (seats) within a room (classroom or lab) that are in use (occupied) during a scheduled class.

**WRHs (Weekly Room Hours):**

This is the number of hours a week that a room (classroom or lab) is in use. For example, the WRH percent for classrooms is the total room hours of instruction divided by the total number of classrooms. Additional details are provided in the Recommendations Section of this report.

**WSCH (Weekly Student Contact Hours):**

This is the total amount of time (hours) spent by students in scheduled classes (lecture and/or lab time) during a week. The WSCH is typically larger than the total credit hours since lab time (hours) often exceeds the credit hours for most courses (e.g. Art, Biology, Chemistry). Additional information is provided in the Recommendations Section.

## **References**

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## Summary of Recommended Space Planning Factors

<u>Space Needs Type</u>	<u>Formula</u>	<u>Factors</u>	<u>Comments</u>
<b>Departmental Space Needs:</b>			
Offices	Office Module x FTE Personnel	Module size ranges between 60 -240 ASF depending on position. Senior administrative positions provided larger modules.	
Office Service	Allocation Factor x Aggregate Office Need	10 - 20 % of aggregate need depending on type of office operation	
Office Service- Waiting Room	Waiting Room module per unit	120 ASF for senior administrative units .02/FTE Student plus 150 ASF minimum for student services units	For prescribed units only
Office Service - Processing Room	Processing Room module per unit	500 ASF for units requiring supplement	For prescribed units only
Office Service - Departmental Storage	Storage Module x FTE Staff	Storage Module = 15 ASF	For prescribed units only
Conference Rooms	Conference Room Module x FTE Faculty & Professional Staff	Module = 18 ASF	Excludes clerical, grad student & student worker positions
Office Lounge	Office Lounge Module x FTE Staff	Module = 5 ASF	Excludes grad students
Teaching Laboratories	Space Factor x Weekly Student Contact Hours (WSCH)  ( Space Factor = Station Module/ WRH x Station Occupancy	Weekly Room Hour (WRH) Use - Ranges from 15 - 22 WRH Station Occupancy - Ranges from 80 - 90% Station Module Size - Ranges from 30 - 150 ASF	WSCH Calculated from Credit Hours WSCH conversion varies by discipline

Computer Laboratories	Space Factor x Weekly Student Contact Hours (WSCH) ( Space Factor = Station Module/ WRH x Station Occupancy	Weekly Room Hour (WRH) Use - Ranges from 22 - 30 WRH Station Occupancy - 80% Station Module Size - 35 ASF	WSCH Calculated from Credit Hours WSCH conversion varies by discipline
Research Laboratories	Research Module x FTE Lab-Based Researchers	Module size varies by disciplines	100% of faculty, .grads and post docs assumed engaged in research. UG research calculated for appropriate depts. using 1/3 module.
Special Use Laboratories	20% of Research Module x FTE Lab-Based Researchers	Module size varies by disciplines	Lab-Based Researchers determined through periodic department survey
Project Room	Project Room Module per unit	Module sizes vary by discipline - 250 ASF Minimum	Primarily used as research space by departments conducting non lab-based research
Media (Room Types 530/535)	Minimum Core + (Module x FTE Students)	Minimum Core = 1,500 ASF Module = .1 ASF	
Clinic (Room Types 540/545)	Minimum Core + (Module x FTE Students)	Minimum Core = 1,000 ASF Module = .1 ASF	
Demonstration (Room Types 550/555)	Minimum Core + (Module x FTE Students)	Minimum Core = 2,500 ASF Module = .1 ASF	
Greenhouses (Room Types 580/585)	Module x FTE Students	Module = 5 ASF	

Classrooms (Room Types 110/115)	Space Factor x Weekly Student Contact Hours (WSCH) ( Space Factor = Station Module/ WRH x Station Occupancy	Weekly Room Hour (WRH) Use - 25  Station Occupancy - 65% Station Module Size - 20 ASF	WSCH Calculated from Credit Hours WSCH conversion varies by discipline
Athletic/PE/Recreation (Room Types 520/670/675)	Minimum Core + (Module x FTE Students)	Minimum Core = 50,000 ASF Module = 8 ASF	Excludes athletic seating
Assembly (Room Types 610/615)	Minimum Core + (Module x FTE Students)	Minimum Core = 21,000 ASF Module = 4 ASF	
Exhibition (Room Types 620/625)	Minimum Core + (Module x FTE Students)	Minimum Core = 1,500 ASF Module = 1 ASF	
Student Lounge (Room Type 650/655)	Module x FTE Students	Module = 2 ASF	Excludes residential lounges
Meeting Rooms (Room Types 680/685)	Module x FTE Students	Module = 1 ASF	
Support Facilities (Room Types 700)	Minimum Core + (Allocation Factor x Aggregate Need)	Minimum Core = 25,000 ASF Allocation Factor = 7.5% of calculated needs	
Health Care (Room Types 800)	Minimum Core + (Module x FTE Students)	Minimum Core = 2,000 ASF Module = .5 ASF	Calculation for student health services operations only

Library (Room Types 400)	Stack Space: Module x Volume Equivalent	.10 ASF per Volume first -150,000 Volumes .09 ASF per Volume - second 150,000 Volumes .08 ASF per Volume - Next 300,000 Volumes .07 per Volume - Over 600,000 Volumes	Calculations for main library only. Collections data acquired through periodic survey. Collections converted to equivalent volumes.
	Reading/Study: (Student Module x (Allocation Factor x FTE Students) (Faculty Module x (Allocation Factor x FTE Faculty)	Student Allocation Factor = 10% Faculty Allocation Factor = 5% Student Module = 26.75 ASF Faculty Module = 29.5 ASF	Allocation factor is assumed use at any one time Modules are composite of Three different seating types
	Lounge: Module x Calculated Library Users	Module = 2 ASF Library Users = (Allocation Factor x FTE Students) + (Allocation Factor x FTE Faculty)	
	Service: Allocation Factor x Aggregate Library Need	Allocation Factor = 20%	Office needs for library calculated per office guidelines.

