New Mexico State University

Space Planning Guidelines

Developed by
Facilities and Services
Office of Space Management
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INTRODUCTION
The Office of Space Management (OSM) was created on March 1, 2001 in response to administrative concerns over the lack of a clear authority for space and who makes decisions regarding the allocation and reallocation of space and facilities.

In addition, the Board of Regents approved the revised and prioritized Capital Outlay Needs for Main Campus of New Mexico State University for 2000-2005 (Five Year Plan) on July 30th, 1999, which contained the following provisions related to space management:

1. Create a new paradigm for management of space on campus. Manage this asset based on University needs. Create an atmosphere that rewards efficient utilization of space.
2. Focus future capital outlay efforts on ensuring that we protect our existing assets before we add additional assets. Accept our role as stewards of the investment that citizens of this State have made in this campus and protect that investment to the best of our ability.
3. Establish and enforce standards for the efficient utilization of space so that future enrollment growth can be accommodated within existing space.

Facilities and space are the university’s largest and most valuable physical assets. Statewide, the university owns or leases nearly six million gross square feet with a replacement value of close to a billion dollars. Sound business practices in addition to the administration’s concerns dictate a need to properly manage such a substantial resource.

Overhead cost recovery from externally funded grants and contracts as well as “I&G” funding from the state are driven by square footage data. This requires efficient management of space and data to ensure the university is receiving its fair share of funding.

Effective space management will bring about more efficient utilization, resulting in better use of our operational dollars as well as the potential for increased revenue.

In recent years before approving capital funding the Commission on Higher Education and the Legislative Finance Committee have required far more rigorous proof of need based on quantitative analysis.

POLICY
From the current NMSU Policy Manual:

Section 9.20.B.8:
Periodic Needs Assessments: Facilities and Services, the Office of Space Management, and the Office of Real Estate shall coordinate to conduct periodic reviews of real estate with the college and library deans, vice presidents, vice and associate provosts and directors to ensure their real estate needs are being met, and to identify any changes that may need to be made.

Section 9.50:
Use of Facilities & Space Management
A. Academic Purpose: Classrooms and other academic space at the university will be used primarily for academic purposes for the benefit of an academic program.
B. Limited Non-Academic Use: Under limited circumstances, academic areas may be used for non-academic purposes. The goals of the organization wishing to use the facilities must be consistent with the mission and goals of the university. Large-scale events or those with liability concerns might require the presence of an organizational advisor and/or liability insurance. Building use fees may be charged as follows: (1) recognized university organizations will not be charged a fee; (2) not-for-profit organizations may be charged a minimal fee; and (3) for-profit ventures will be charged a fee.

C. Personal Gain and Competition with NMSU Prohibited: University facilities may not be used to teach students for private gain or in programs which compete directly with university-supported programs.

D. Keys and Locks: Employees of Facilities and Services are instructed not to open locked doors for any individual. The locksmith shop will respond and open doors upon confirming the identification of the requestor and securing permission from the department head. Any new keys will be delivered to the department head for issuance.

E. Use of Community College Facilities: The community college campus executive officers are responsible for assigning space in the following priorities: academic instruction, continuing community education sponsored by the community college, student organizations, and community organizations. The campus executive officers are authorized to refuse use of the facilities on a case-by-case basis and charge a user fee as deemed necessary.

F. Space Management: It shall be the policy of the Office of Space Management to provide the data and analysis to ensure that all space owned by the Board of Regents of NMSU is being used to its full potential and allocated fairly. Any proposed or requested change in how space is allocated between colleges and/or any other major administrative unit must be forwarded to the Office of Space Management and to Facilities and Services for analysis and recommendation as part of the approval process.

**PRINCIPLES OF SPACE MANAGEMENT**

- The Board of Regents has ownership and control of and liability for all buildings and facilities belonging to, leased by or otherwise controlled by the university.
- All university space will be managed to ensure effective and efficient utilization, as well as fair allocation and reallocation will be based on measured need.
- All OSM data, analysis, and reports are in the public domain and available for inspection.
- Space should be used effectively and efficiently. Efficient use of space should be rewarded, while inefficiencies should carry a cost.
- Space standards and guidelines will be applied uniformly for comparative analysis, while recognizing that different functions may have different space needs.
- Allocation of increased square footage must be consistent with a demonstrated campus-wide need.
• Allocation of space does not imply permanence, but rather a commitment based upon continued program justification and in consideration of the campus-wide space needs in response to ever changing program priorities.

• Allocation, management and comparison of space need to take into account the peculiarities of existing conditions and the availability or lack of funds for renovations.

PROCEDURES
Any proposed change in how space is allocated must be forwarded to the Office of Space Management (OSM) for analysis and recommendation as part of the approval process. All Major Administrative Units (MAUs) will be supplied with an annual report from OSM showing all space currently allocated to that unit as well as a summary of the various types of space.

The allocation and reallocation of space internal will be managed with an emphasis on ensuring maximum utilization and an equitable distribution of space based on demonstrated needs. OSM will assist the heads of MAUs with summaries and analysis of space within their areas.

The Space Guidelines currently apply to all university departments (academic, administrative, auxiliary and support) on the main campus (Las Cruces). Branch campuses are not currently subject to the Guidelines and will be responsible for managing their own space efficiently. OSM will provide information, data and other assistance as required or requested in order to assist the community college campuses in managing or allocating their space.

The Office of Space Management (OSM) will perform an annual space audit to maintain the accuracy of the space inventory and floor plans. In addition, OSM will annually interview all deans (or their delegates), as needed, to gather additional information about each unit’s current space use and needs. This data will be used for ongoing analysis to determine adequate space allocation.

OSM will develop standards and guidelines to determine the square footage needs of all departments for comparison to actual square footage in use.

When a Major Administrative Unit (MAU) determines that additional space is needed beyond that which is currently allocated, a formal request for additional space must be submitted to OSM.

OSM will then perform a thorough analysis in order to make a recommendation to the Space Committee. Formula square footage based on accepted standards and guidelines will be compared to existing and requested additional square footage to determine the need for new space. OSM will present its findings and recommendation to the Committee. All recommendations presented will be accompanied by supporting documentation Justifying the findings of OSM. Heads of MAUs affected by the recommendation will be copied and there will be an opportunity for them to present their views to the Committee.

Following further review the Space Committee will make a final decision as to the disposition of the request and return it to OSM for implementation. The Provost will be notified of all decisions of the Space Committee and appeals may be made to the Provost.
It is the intent of this process to keep it as simple as possible to expedite those changes where there are no disputes to the recommendations of OSM. If an affected party disputes the findings of OSM the Provost shall have the authority to ensure that an appropriate decision is reached.

Based upon ongoing university-wide space analysis OSM may act independently to recommend a need to reallocate space between MAUs. When OSM initiates such recommendations the above procedures will still apply, with OSM completing the space request form.

Proposed changes in space and requests for additional space must be submitted, and may be submitted to OSM as an email attachment or a printed document.

OSM will provide data, analysis, and guidance as needed to deans, department heads, and other administrative heads to assist them in optimizing space utilization within their organizational units.

**Additional OSM Responsibilities**
- Maintain the official list of all university owned and leased buildings using the officially designated building names, numbers, acronyms and physical addresses. All departments and personnel shall use this master list when referencing any university building.
- Assign new building numbers and addresses whenever necessary for all newly built or leased buildings and for previously unidentified university property.
- Building names (when named for a person or corporation) will be assigned or changed only with the approval of the Naming Committee and the Board of Regents, and recorded by OSM.
- Maintain and analyze the data necessary to ensure the current and future equitable allocation of all university space resources. The data will include but not be limited to a comprehensive inventory of all university buildings and rooms, accurate digitized floor plans, and the analysis tools necessary to effectively manage space.
- Maintain in its database the official room numbers for all accessible spaces of the university. OSM will coordinate room signage as required to ensure all rooms are properly signed. OSM will use a standardized room numbering system.
- Prepare the annual BRR report for the Higher Education Department, the facilities component of the IDC report, as well as any other ad hoc space related reports that are requested.
- Periodically publish its most recent data, including comparative analysis of MAU usage and predicted needs based on adopted standards.
- Provide ad hoc reports as requested and within the capabilities of its database.
- Provide accurate and current data to the Registrar’s office for class scheduling purposes.
- Provide accurate and current data to others whenever requested.
- Participate in and provide input during the design phase of capital improvement projects to ensure compliance with the space standards developed by the university.
DEFINITION OF TERMS
In discussing space guidelines, it is important to understand terminology. The following are New Mexico State University's generally accepted definitions of the types of space and building areas that are relevant to application of these guidelines. These definitions are consistent with those used by the "Postsecondary Education Facilities Inventory and Classification Manual" (FICM), published by the U.S. Department of Educational Research and Improvement, NCES 92-165r. FICM is a standard reference document used by nearly all universities across the country, including NMSU. It can be accessed on the web at http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2006160 or in pdf format at http://nces.ed.gov/pubs2006/2006160.pdf

Gross Square Feet - GSF (also called BGSF-building gross square feet)
GSF is the total area of all floors of a building. This includes the area within the outside faces of exterior walls and floor penetration areas, however insignificant. GSF also includes all building structural, mechanical and other infrastructure systems, all building circulation space, and all support space such as public toilets, lobbies, etc. An interesting issue for New Mexico State University is that this can sometimes include building arcades, patios and/or outdoor teaching spaces, which may represent a significant area of space on the campus. Such spaces are usually included only if they have a specific assignable function. Gross area also includes space located above and below grade (basements.)

Net Assignable Square Feet - NASF
NASF refers to the space inside a room, as measured from interior wall to interior wall, including "nooks and crannies" which may exist in older buildings. It does not include building circulation, or areas such as restrooms, elevators and stairs. This is the space that is available for assignment to an occupant or for a specific use.

Net to Gross Efficiency
The efficiency of net to gross square feet is a common standard of building efficiency and utilization. This figure is reviewed by the state any time new construction or remodeling is considered. OSM continually analyzes building efficiencies on the campus as it develops and plans new and renovated buildings and manages existing space. The overall goal is to move toward the highest overall building efficiency that can be achieved, while also meeting program needs and requirements.

Office
A space housing faculty, staff or students working at one more desks, tables or workstations configured as a private, shared or open office with or without cubicles.

- Private office - An enclosed work space for one person, suitable for activities which are confidential, demand a lot of concentration or include many small meetings.
- Shared office - An enclosed work space for two or three people.
- Open office - An open work space for more than three people with or without cubicles.
- Cubicle - A semi-enclosed work space for one person within an open office
- Workstation - A work space for one or more individuals typically without partition walls and within an open office.
- Consideration may be made for functions that require the increase of space or the combination of office space with other types of work space when the job function requires it. This would include such things as additional work space, shelving, equipment, etc.
SPACE PLANNING GUIDELINES

Offices
The following guidelines articulate the sizes, utilization guidelines, and layouts for the various types of offices at New Mexico State University. As we think about space planning guidelines with regard to offices, it is important to consider the following:

- Application of a modular planning approach, to preserve flexibility of office use over time. For example, co-locating offices of similar sizes and types can be very useful as we think about future needs and changes in academic and other programs.
- Placement of offices in the building core rather than along the windowed side of buildings, in order to create the flexibility noted above as well as to promote air quality and to maximize light penetration for all building occupants.
- Consider what is necessary to keep, store and archive. Quite often office occupants feel that their offices are cramped, only to find that the space is adequate once they have eliminated excess paper, boxes and files. This can also help to identify specialized storage needs or furniture solutions that better organize office spaces.
- Undertaking reviews of office spaces to be sure that utilization continues to make sense, to update office rosters, and to make any space reallocations that might be required.
- The figures shown in the space guidelines that follow demonstrate sample diagrammatic office layouts, for the purpose of visualizing the variety of office spaces at NMSU and thinking about how the guidelines can be used to plan efficient and flexible space. Some of the office "shapes" in our existing spaces are irregular and are not layouts that New Mexico State University would likely plan in new buildings. These shapes represent the reality that in many of our older buildings we have unusual building and room shapes, which represent challenges for layout. At the end of this section, we have attached a summary of the office guidelines.

Dean/Vice President Offices
Dean and Vice President Offices should be a single, private office intended to accommodate a desk, files, bookshelf and a meeting area for an additional 5-6 people. NASF should be approximately 240.
Sample layouts are illustrated below:

![Figure 1A](image1.png)
![Figure 1B](image2.png)

**Full-Time Faculty Offices**

Full-time faculty generally are assigned a single, private office. Individual faculty offices are intended to accommodate a desk, files, bookshelf, and workspace for the faculty member, plus a meeting area for an additional 2-3 people as needed.

Part-time or associate faculty, depending upon their circumstances, may be assigned spaces more similar to visiting faculty and research associate offices (outlined in the next section.)

**Special Circumstances**

In special circumstances, to be evaluated by the Dean and/or Department Chair, a faculty office may be larger or smaller than 160 NASF. These circumstances might include:

- Special or unusual building configurations which affect the efficiency of the measured NASF
- Particular accessibility issues
- Overall school and/or department space constraints or needs
- Needs for group meeting spaces
- The need to merge needs/expectations of interdisciplinary programs
- Specialized functions to be performed in these spaces (job function as opposed to rank or title.)
Sample layouts are illustrated below:

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Second Offices
New Mexico State University strongly discourages the assignment of second offices for faculty. A second office may be considered in the following cases:

- Department chairs may be assigned a second administrative office, particularly if the primary faculty office is in a separate building from the department office.
- Faculty who are in leadership positions in independent laboratories, faculty who are Associate Deans or faculty who have joint appointments and interim faculty might be assigned a second office, particularly if their primary office is a significant distance (i.e. across campus) from the home department.
- Faculty second offices should not be as sizeable as the primary office; that is, the second should be smaller than 160 NASF. Two faculty offices in the same building (other than in a chair situation) are strongly discouraged. The Space Committee will consider and approve or deny requests for second faculty offices, with the input of the appropriate Dean or Director

Please note that various schools at New Mexico State University may have larger or smaller average faculty office sizes, for the reasons mentioned above.

Visiting Scholars, Visiting Faculty, Lecturers, Fellows and Research Associates
Visiting Scholars, Visiting Faculty, Lecturers, Fellows and Research Associates generally are assigned shared office space, with two individuals housed in one 160 NASF office. A variation on shared offices for these faculty can be open-office cubicle arrangements, with typical cubicle sizes of about 80 NASF per person. In either case, space assignments for these faculty depend upon the type of work being done, whether individuals have full or part time appointments, and overall program
needs and building constraints. Figure 6A shows a possible layout for two associates sharing one office space. Figure 6B demonstrates an open office cubicle arrangement.

Sample layouts are illustrated below:
Emeritus Faculty Offices
Emeritus faculty with significant continuing research or teaching responsibilities, and/or in active or “recalled" status, may be assigned a private office similar to that of a faculty office, and/or laboratory space, as appropriate and as space is available, requested and approved.

When emeritus faculty are engaged in teaching and research on a part-time or infrequent basis, they generally will be assigned a shared office space of 160 NASF to accommodate two emeritus faculty work stations (80 NASF each.) Layouts of these types of shared spaces are similar to those shown previously for visiting faculty and research faculty. Layouts may also include cubicle environments or shared office spaces. More than one person could be assigned to a work station if the use of the space can be scheduled appropriately and if locked private storage is available.

As space is available, an alternative in this case could be a cubicle environment designed particularly for a community of emeritus faculty members in the same or related disciplines. These spaces can incorporate a shared lounge, storage and (as appropriate and as resources permit) administrative support.

An example layout of this kind of emeritus center is shown below.

Figure 4
Emeritus Center - Shared Space for four faculty work stations
576 NASF

Staff Offices
Space for full-time non-faculty staff may be cubicle space, a shared office, or a private office, depending upon the nature of the work. Part-time staff should be located in shared spaces or cubicles at the smaller end of the range. Student employees should be located in shared cubicles or open work areas. Work stations and offices may be smaller or larger, depending upon the specific requirements of the job.
One of the most challenging aspects of allocating office space for staff at New Mexico State University has to do with determining which staff members should have a private office and which should have a cubicle or open office environment. Private offices are heavily favored at New Mexico State University, and many staff tend to resist cubicles or open office settings, despite the fact that such settings are commonplace in corporate settings and also at many universities and colleges. We have developed the following guidelines for staff cubicle/office/teaming spaces as a way to assist schools and areas in allocating office spaces.

**Guideline for Determining Staff Office Space Type**
The decision about whether to allocate an office or a cubicle or a teaming environment to staff members should be made on the basis of the type of work an individual performs. The following factors can be a part of determining workspace assignments:

- Job position, rank, and classification
- Time appointment (full-time versus part-time, seasonal versus year-round, job share versus more traditional job arrangements)
- Supervisory and/or managerial role
- Nature/frequency of interaction with internal or external client groups
- Nature/frequency of interaction with students (other than work study situations)
- Nature/frequency of confidential communication in person or on the telephone
- Nature/frequency of working with other members of a team pursuing similar tasks
- Nature/frequency of processing confidential information.
- Nature/frequency of handling equipment/material that requires security.
- Volume of noise associated with departmental activity or individual job role
- Degree of isolation required for completion of routine job duties

Guidelines for the types of offices, cubicles and teaming spaces assigned to individual staff are as follows:

- Staff Senior Associate Deans, Associate Deans, and Assistant Deans generally qualify for an individual office. The size of such offices will vary depending upon the criteria listed above (need for meeting spaces, need for specialized secure equipment, etc. These offices might range up to 140 NASF.
- Departmental Managers and/or Program Directors with three or more direct reports generally qualify for an individual office. Managers with fewer than three direct reports qualify for offices when they are available and when the scope of work requires a private space. These offices typically range from 100 to 140 NASF.
- Managers and other staff with no direct reports qualify for a cubicle environment. Shared offices can be appropriate based on the criteria above (need for secure space, quiet areas, etc.) These spaces range from 64 to 100 NASF.
- Part-time, seasonal and job-sharing staff qualify for a cubicle environment or, based on the criteria above, a shared office. This guideline applies to all of the staff categories listed above, even senior managers. These spaces typically range from 64 to 80 NASF.
- All of the staff categories above, from Associate Deans to Managers to part-time staff might qualify for a teaming or open office environment. These environments are particularly useful for groups that work closely together on a daily basis, project-based groups, groups that desire or need interaction in order to complete their work, groups that rely heavily on cross-training and shared responsibilities, etc.
The following are the guidelines for these types of staff office spaces.

**Cubicle Spaces**
Staff may be accommodated in cubicle environments ranging from 64-80 NASF per person, depending on the type of work. In general, the 64 square foot cubicle is the preferred size; cubicles reach the 80 square foot range only for particular and specialized work related reasons. Cubicles have tended to be the exception rather than the norm at NMSU, but they are successfully used in a range of office environments and we expect to see more of them in use at NMSU over time, particularly as space efficiency and utilization become more essential. Cubicle environments can have the benefit of being more open, airy and light, and can make more efficient use of space. Such environments are particularly conducive to team-oriented office groupings. Cubicle environments work best when they contain adequate numbers of conference and small group meeting spaces, for confidential conversations and/or group tasks. Additional storage is sometimes required for file intensive office groups.

Sample layouts are shown below:

![Figure 5A](image.png)
Staff Office Space - Cubicle Environment
80 NASF
Shared Offices
Staff also may be assigned to share an office space of 160 NASF, which amounts up to 80 NASF per person. This can be a good solution for staff that require a quiet office environment and is important for writing, financial planning or other tasks. In addition, for staff working in teams of two this can be ideal. Below is a sample layout for this type of shared office format.
**Private Offices**
Management staff, depending upon the nature of their work, may require a private office. The size of the office varies depending on the type of work and the need to supervise other employees and/or participate in private discussions. When private offices are justified, management staff members typically are assigned private offices of 100 NASF. If senior management staff and/or department heads require different or larger space accommodations for specific reasons, such cases are considered by the appropriate Vice President or Dean on a case-by-case basis, and space is allocated depending on the work needs of these individuals. In some cases, Program Directors require an office of 140 NASF due to the need to accommodate more people for team meetings.

![Management Office Space](image)

**Student Office Space**
Assignment of office space for students tends to vary from college to college and from department to department. In general and when it is available, space is allocated to selected active doctoral students in a school, with the shared space ranging from 30-64 NASF per person. 64 NASF is at the highest end of cubicle space for students; in general, students can be comfortably housed in spaces less than this.
The illustrations below show such student environments.

Figure 6A
Student Workstations/Office Space
30 NASF

Figure 6B
Student Workstations/Office Space
64 NASF
## Comparative Data on Office Space

Comparative office sizes from different universities and from different state guidelines are available upon request. The reference documents section of these guidelines provides some of this information. The array of sizes used by peer institutions helps to place office space guidelines in perspective. Note that the sizes recommended for offices of different types are generally similar to the larger size standards used by other universities or state space guideline models.

### Space Planning Guideline Summary

<table>
<thead>
<tr>
<th>Group</th>
<th>Employee Type</th>
<th>Office type</th>
<th>Recommended Sq ft</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dean</td>
<td>Dean/VP</td>
<td>Office</td>
<td>240</td>
</tr>
<tr>
<td>Faculty</td>
<td>Tenure track, full time</td>
<td>Office</td>
<td>160</td>
</tr>
<tr>
<td></td>
<td>Tenure track, part time</td>
<td>Shared office or cube</td>
<td>80</td>
</tr>
<tr>
<td></td>
<td>Second offices*</td>
<td>Small office, shared office or cube</td>
<td>80 to 160</td>
</tr>
<tr>
<td>Emeniti</td>
<td>Active</td>
<td>Office</td>
<td>160</td>
</tr>
<tr>
<td></td>
<td>Non-active</td>
<td>Shared office or cube</td>
<td>80</td>
</tr>
<tr>
<td>Other teaching</td>
<td>Lecturers</td>
<td>Shared office or cube</td>
<td>80</td>
</tr>
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<td></td>
<td>Sr. Lecturers</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Consulting Faculty</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Visiting Faculty</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Others</td>
<td>Affiliates</td>
<td>Shared office or cube</td>
<td>80</td>
</tr>
<tr>
<td></td>
<td>Visiting Scholars</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Fellows</td>
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<td></td>
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<tr>
<td></td>
<td>Research Associates</td>
<td></td>
<td></td>
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<tr>
<td>Staff</td>
<td>Program Directors</td>
<td>Office</td>
<td>140</td>
</tr>
<tr>
<td></td>
<td>Full Time</td>
<td>Small office, shared office or cube</td>
<td>64 to 100</td>
</tr>
<tr>
<td></td>
<td>Casual &amp; Temp (full time)</td>
<td>Shared office or cube</td>
<td>64 to 100</td>
</tr>
<tr>
<td></td>
<td>Part Time</td>
<td>Shared office or cube</td>
<td>64 to 80</td>
</tr>
<tr>
<td></td>
<td>Research Associates</td>
<td>Small office, shared office or cube</td>
<td>64 to 100</td>
</tr>
<tr>
<td></td>
<td>Student workers</td>
<td>Cube</td>
<td>36 to 64</td>
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<td>Students</td>
<td>RAs</td>
<td>Cube</td>
<td>30-64</td>
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<tr>
<td></td>
<td>TAs</td>
<td>Cube</td>
<td>30-64</td>
</tr>
<tr>
<td></td>
<td>Grad Students</td>
<td>Cube</td>
<td>30-48</td>
</tr>
</tbody>
</table>

* Second offices
Cube = cubicle
Casual & Temp Staff = Occasional & Temporary Staff (full time)
Classroom Space Assignments and Utilization Analyses - Provision of adequate numbers and sizes of classrooms, in the appropriate locations, to serve academic needs. (How many large or medium-sized classrooms are needed, versus smaller seminar rooms, in what buildings, and available at what times?)

Classroom Space per Station or Seat - Provision of correctly sized spaces per seat within any given classroom. (Are classrooms intended for 100 students in fact adequately sized to seat 100 students with the appropriate furniture?)

Classroom Technology Support - Provision of technology. (Is the classroom capable of supporting the teaching needs of the faculty, even if it is large enough, in the right place, available at the right time, and with the appropriate space per student seat?)

Flexibility of Classroom Space - Flexibility is a key factor in the design of classrooms. The configuration of the room and furniture layout should have the ability to change as the pedagogy evolves, and classroom designs should reflect this.

Classroom Pedagogy – active learning in flexible arrangements versus fixed or lecture style seating, for example.

As these factors demonstrate, defining and allocating classroom space is a complex undertaking. The space planning guidelines in this document primarily address the second point noted above: guidelines for the appropriate amount of space provided in classrooms per seat, or per student station. The guidelines are most useful in helping to estimate the actual size of classrooms needed for new construction or for renovation projects which revamp existing classroom space. They also help to assess the efficiency of existing classroom space, when concerns arise about the adequacy of existing rooms to accommodate assigned numbers of students.

These factors and issues are addressed on a regular basis by the OSM and the Office of the Registrar, which centrally allocates, equips and schedules classroom space. The Office of the Registrar, working with OSM, weighs these issues and works with schools and departments in the design of new classrooms and the renovation of existing rooms. The involvement of the Registrar is key because of the need to coordinate classroom uses and functions across the campus in order to meet academic needs. The Office of the Registrar and OSM also can help by advising about key issues such as grouping classrooms, clustering classroom support, and providing formal and informal breakout spaces. All of these can affect classroom plans quite markedly.

The table presented on the next page provides a range of guidelines for different types of classroom spaces. Actual space per station, or per seat, in a classroom may vary depending on existing room configuration as well as type: of furniture and seating used (fixed versus movable, tablet arms of varying sizes, tables, or theater-type seating). Also, as classrooms are increasingly outfitted to accommodate sophisticated audiovisual and technological equipment, streaming video, rear projection capacity, etc., the size of the rooms may need to be increased. In general, basic technology needs include a projector, white board, Ethernet connection, and video capacity. The guidelines below accommodate these types of needs. Recommendations for seminar rooms for 25 or fewer persons are also applicable to space planning guidelines for conference rooms.
### Classroom Space Guidelines

**Net Assignable Square Feet (NASF) per Station**

<table>
<thead>
<tr>
<th>Room Category</th>
<th>Room Capacity (No. Stations)</th>
<th>Movable Chairs W/ Tablet Arm (TA) 15&quot;- 20&quot; Arms nasf</th>
<th>Fixed Pedestal or Riser Mounted Seating w/ TA nasf</th>
<th>Auditorium Seating nasf</th>
<th>Movable Table and Chairs nasf</th>
<th>Fixed Pedestal Table and Chairs nasf</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seminar/ Conference/ Small Class</td>
<td>0 – 25</td>
<td>17 - 24</td>
<td>17</td>
<td>--</td>
<td>16 - 26</td>
<td>20 - 22</td>
</tr>
<tr>
<td>Classrooms</td>
<td>26 – 49*</td>
<td>16 - 18</td>
<td>17</td>
<td>--</td>
<td>16 - 26</td>
<td>18 - 20</td>
</tr>
<tr>
<td>Classrooms</td>
<td>50 – 99</td>
<td>14 - 16</td>
<td>13</td>
<td>14 - 17</td>
<td>16 - 22</td>
<td>18 - 20</td>
</tr>
<tr>
<td>And</td>
<td>100 – 149</td>
<td>--</td>
<td>12 - 14</td>
<td>12 - 15</td>
<td>16 - 22</td>
<td>18 - 20</td>
</tr>
<tr>
<td>Lecture</td>
<td>150 – 299</td>
<td>--</td>
<td>--</td>
<td>10 - 14</td>
<td>16 - 22</td>
<td>17 - 19</td>
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<td>Rooms</td>
<td>300+</td>
<td>--</td>
<td>--</td>
<td>10 - 14</td>
<td>16 - 22</td>
<td>16 - 18</td>
</tr>
</tbody>
</table>

Figure 7

Classroom Space Guidelines

NASF per Station *Seating capacity per fire codes for most classrooms with only one entrance/exit door should not exceed 49.

Sources:
The Classroom Space Guidelines data is based on a synthesis of space guidelines developed by the following:

The following figures show layouts for a variety of classroom spaces and configurations. These layouts are not intended to be exhaustive; rather they are illustrations of some typical classroom sizes and formats.

Figure 7A
Small Seminar Room - 416 NASF
Capacity 16 (26 NASF per seat)

Figure 7B
Medium Classroom with fixed pedestal tables and chairs - 960 NASF
Capacity 54 (18 NASF per seat)
Figure 7C
Medium Classroom with moveable tables and chairs - 530 NASF
Capacity 30 (18 NASF per seat)

Figure 7D
Room Size: 56X32 with 200 SF for teaching area with raked floor - 1,992 NASF
Auditorium Seating with Fixed Chairs and tablet arms
Capacity 135 (15 NASF per seat)
Computer Labs
Computer labs, which are areas available for student use on a casual or an assigned basis, should provide approximately 30-36 NASF per workstation. ICT and Facilities Space Planning work with specific colleges or departments requesting space to develop creative approaches for design of spaces to house computer clusters. This is particularly important in rooms or areas with challenging building configurations. An alternative to the single seat per machine is a shared workstation model, with two or more students sharing terminals for group projects. Terminals can also be effectively used lined up along wide corridors or along building walls in larger rooms. When designing a computer lab, it is important to provide adequate space on the work surface for notebooks and papers in addition to monitors and CPUs.

Some computer lab work areas should be height adjustable or at a 32 inch height to accommodate wheelchair access.

The following figures provide sample layouts of computer clusters.

Figure 8A
Computer Lab
36 NASF per workstation
Figure 8B
In-line Computer Cluster
30 NASF per workstation

Figure 8C
Computer Cluster
36 NASF per workstation
Conference Rooms

A Conference Room is considered as a meeting space planned for 25 or fewer people. Conference Room space is defined according to the same criteria as Seminar Rooms, with seating around a table, space for audio/visual equipment and presentations, and space for food service or other conference needs as required.

Determining the Number of Conference Rooms Required

The range of space for a small seminar room or conference room of 0 - 25 people is approximately 16 to 26 NASF per person. The larger area is for a room with space for audio/visual equipment, a screen and/or white board for projection and display, bookcases or shelves, and a serving area for buffet food or coffee service. The smaller areas per person are for conference rooms without these capabilities.

The total amount of Conference Room space required to serve a grouping of office areas varies widely. The following guidelines serve as frameworks for determining the number of conference rooms in each area, knowing that particular circumstances might lead toward the development of varying numbers of rooms for different types of areas.

In general it is recommended that conference rooms be as few as possible and as fully utilized as possible. Thus it’s desirable to share these spaces, locate them for maximum use, and to schedule them for maximum utilization (central scheduling if possible).

In predominantly private office environments (defined as areas with a majority of offices, minority of cubicles), the guideline is:

- 1 conference/meeting space for every 20 people
- 2/3 of these spaces should be for 8-10 people
- 1/3 of these spaces should be for 5-7 people
- Alternatively, all spaces can be sized for 10-15 people and then divisible into smaller rooms. Feasibility of doing this depends upon requirements for soundproofing, cost, etc.
- There might be one larger space per floor (holding 20-30 people)

In predominantly open office environments (defined as areas with a majority of cubicles and a minority of offices), the guideline is:

- 1 conference/meeting space for every 10-12 people
- 2/3 of these spaces should be for 8-10 people
- 1/3 of these spaces should be for 5-7 people
- Same comment as above on creating divisible rooms.
- Additional tiny spaces (phone room size) might be needed
- There might be one larger space per floor (again, for 20-30 people)

Note that if a room is used as a classroom (even a very small class, as seminars are) for more than 50% of the time, it is classified as a classroom.

The following layouts provide some sample conference room plans. In addition, the classroom plans in the previous section show larger size conference room options.
Figure 9A
Conference/Small Consulting - 156 NASF
Capacity 6 (26 NASF per seat)

Figure 9B
Conference - 416 NASF
Capacity 16 (26 NASF per seat)
RESEARCH AND LABORATORY SPACE
Research and laboratory space needs and guidelines vary markedly between schools and departments, types of research being undertaken and special equipment needs. There are a number of different types of laboratories that exist on campus, including (among others):

- Computational laboratories
- Wet laboratories
- Dry laboratories
- Studio or design-based laboratories
- Teaching laboratories
- Special large equipment or instrumentation laboratories

The allocation of research and laboratory space within schools and departments typically is determined by department chairs in collaboration with the school Dean.

When additional space is needed, and/or substantial space revisions are requested for research functions, Capital Planning and Space Management assists schools with defining the specific types of research spaces required, and then with benchmarking, comparative studies, and laboratory designs. This helps to ensure flexibility, modularity and consistency in space allocation, as well as efficient use of existing space and comprehensive planning of proposed new space. Facilities Space Planning works with schools to define areas such as student space, core facility spaces, common equipment areas, etc.

Planning Themes
While laboratory types vary markedly and can be so specialized as to defy space planning guidelines, there are some common themes to keep in mind in laboratory space planning. Some of these are as follows:

- **Modularity** - Making laboratory design as modular as possible is key, particularly in terms of HVAC design, specialized systems and structural loading designs. This is important because, given the increasingly fast pace of change in science disciplines and techniques, we need to be able to modify and improve lab settings as science evolves and changes.

- **Flexibility** - While each lab is different and many specialized features are required, it is important to plan laboratory spaces as flexibly as we can both because of the changes in science mentioned above and also because research programs ebb and flow over time. Flexibility in design enables us to allocate additional space easily, as research programs grow or shrink. Often flexible planning enables us to co-locate similar laboratory programs, which furthers scientific goals and encourages collaboration.

- **Zoning** - Creating laboratory "zones" which also enable flexibility and ease of operations is very important. EHS and ADA codes are critical here.

- **Shared Laboratory Support and related spaces** - Sharing of laboratory support rooms and functions has become much more common today that was the case in the past. Continuing to develop shared support spaces is critical in constraining costs, using space efficiently, and being able to provide state-of-the-art spaces. It is important that these kinds of shared spaces are planned well from the very start, so that sharing can be accommodated. Examples of support and other spaces that should be considered for sharing include:
  - Seminar and conference rooms
• Student spaces (for maximum flexibility, these should be interchangeable, rather than
dedicated to individual faculty research groups)
• Computer clusters and labs
• Preparation rooms - (there is a large range here - everything from rooms to prepare rocks
and minerals to those housing chemicals and cultures)
• Storage rooms
• Dark rooms
• Glass wash
• Equipment rooms - (again, a large range - from microscopes to isotopes and other
specialized equipment)
• Cold rooms
• Greenhouses
• Analysis rooms

Utilization - Laboratory space is the most expensive space that any university develops. It is
critical that this type of space is well used, which requires regular monitoring to see how the
space is used and for what purposes. For example, a wet lab space being used to store
materials rather than engaging in an active research program is not an optimal use. Assessing
utilization involves:
• Performing regular utilization walk-throughs and studies;
• Evaluating how many researchers are housed in each research space;
• Assessing how active the research program is (measures commonly used include
publication activity, grants, awards, etc.).
• Determining how critically important the research is to the university or school’s
academic mission.

Service Centers and Core Facilities - Developing core facilities, which in some cases become
service centers, is another way of sharing laboratory facilities that could not be developed or
housed by individual investigators.

This can save markedly on the cost of expensive laboratory equipment, as well as energy and
other operations costs. These facilities need to be well staffed and organized, so that the
equipment and research needs of all parties are well met.

Accommodating storage needs - We have all seen laboratories that begin to look like storage
rooms, either because there is no other storage available or because researchers cannot
dedicate time to developing storage options. It is important that storage for laboratories is
carefully thought out, so that the highest and best use of laboratory spaces can be achieved.

These themes have different applications in laboratory design, depending upon the type of laboratory
(wet labs are very different than computer or teaching labs, for example). Nonetheless, they are
important themes to keep in mind as planning tools.

Guidelines
As mentioned above, research space needs can vary widely, ranging from a computer workstation to
a large engineering lab with a wind tunnel installation. The following present some general planning
guidelines that can be followed in many cases with regard to wet laboratories in the biological and
medical sciences, as well as dry laboratories (including those with and without teaching lab needs.)
Additional guidelines are being developed by the Office of Space Management as a resource for the campus related to other types of laboratory spaces. In the coming years, we plan to develop guidelines for the following additional laboratory types:

- Wet Laboratory (Chemistry) - sometimes called "super wet"
- Computer Laboratory
- Instrumentation Laboratory
- Teaching Laboratories (being developed as part of the shared teaching lab building planning)
- Core Facilities

**Wet Laboratories (most applicable to Biology and Bio-Medical Labs)**

While laboratory needs vary widely between disciplines, as mentioned above, NMSU's goal is to configure laboratory space in as flexible and modular a way as possible because of the fact that research needs and methods change and evolve over time. Laboratory space is typically configured in standard laboratory modules, which become space denominators that are designed to meet a variety of research needs. These modules allow for flexibility in planning the following: mechanical/electric plumbing (MEP) systems; heating, cooling and ventilation (HVAC) systems; casework; laboratory support spaces; specialized functions; partitions; fume hoods; etc.

Laboratory modules, then, become the building blocks for planning research space. Larger units can be created by aggregating a number of modules, and by the same token smaller laboratories can be created with portions of modules. The number of modules allocated to each researcher is based on the type of work being done, and the associated requirement for research space. This allocation of research space can ebb and flow over time, as research programs change. The planning module is repetitive and regular, and enables flexibility in design. The size varies depending upon the depths requires for special equipment or particular research purposes. The actual layout and zoning of the laboratory modules depends upon the specific laboratory function and research needs, including sinks, fume hoods, and special support, as well as the building floor plan. For example, the relationship between laboratory and office zones, or between laboratory and support space, will vary depending upon the type of research and laboratory need. The module component will remain standard while the ways in which the modules are arranged will differ from laboratory to laboratory.

**Typical Length and Width**

The width dimension of a standard bench lab module for this lab type is typically 10' 6. This dimension accommodates wall thickness and 30" deep benches on either side of a 5' wide aisle (the 5' aisle is wide enough to accommodate people working back to back at opposite benches, the 60" ADA wheel chair turning diameter, and a 36" wide in swinging door with the ADA required 18" clear area next to the strike). A significantly greater width becomes inefficient and gains little in additional functional workspace unless it is to accommodate unusually large pieces of research equipment that might be 3' or 4' deep. A significantly narrower width becomes too tight to allow efficient functioning room for lab technicians, students or researchers who use lab benches and equipment on both sides of the room.

The length dimension of a single standard bench lab module is typically assumed to be 10 'long. However, this dimension can easily vary according to a building's structural system or plan configuration. The critical dimension is the width, not the length, of the wet lab bench module. Ideally, lab module lengths are multiples of their width. This adds flexibility to the building or space in that modules (benches and aisles) can be arranged longitudinally or transversely without loss of efficiency.
At a typical 10' length, one standard wet lab bench module becomes approximately 110 NASF (11' wide x 10' long.) Two lab modules are often placed end-to-end to make one longer lab of 220 NASF (11' wide x 20' long.) In addition, two or more lab modules can be placed side-by-side, creating double or triple width labs. In this case, the intermediate "side" walls are eliminated and the lab benches in the center become double-width island benches, providing workspace on both sides.

**Important Factors**
An important factor in the overall building layout for research laboratories are seismic standards, particularly in larger buildings with deeper floor plates. In order to meet seismic requirements, the layout of laboratory, support and office space often needs to be varied at the middle and ends of buildings in order to accommodate bracing and/or shear walls.

**Dry Laboratories**
Dry laboratories can also be designed with modularity described in the previous section on web laboratories. As in wet labs, many of the support spaces can be shared. Moveable tables and storage cabinets can lend flexibility for changing research needs over time. The following figures give a sense of dry laboratory ideas. Figure 14C shows a typical research space and Figure 14D shows a research space with the addition of dedicated teaching and storage space.
OTHER SPACES
There are a number of other spaces that present challenges in planning and/or renovating buildings. Some of these include office service space, storage space, kitchen space, and touchdown space. While we have not developed square footage guidelines to size and plan these types of spaces, we offer the following observations and planning ideas related to their development. We will be working to develop additional guidelines on these types of spaces, and welcome thoughts, comments and perspectives.

Office Service Space
There is sometimes the tendency to design office service space for individual workgroups, which can result in cramped and poorly organized spaces that don't operate particularly well. Office service space is generally much more effective when it is centralized on a floor or in one location. This should be the focus, and this often can include sharing such space between groups. Separate office service spaces for each small group should be discouraged, for space utilization reasons as well as for cost reasons (equipment costs that could be shared - copiers, postage meters, printers, etc.) and for sustainability reasons (such as energy costs resulting from operating duplicative equipment group by group and procurement costs resulting from small orders of the same supplies rather than one larger order.)

Storage Space
For day to day storage of routine materials on campus, we have developed a few key guidelines:

On-campus storage ideally should not exceed 5% of any MAU's total space. If storage exceeds this percentage, an assessment should be made of solutions and alternatives. Storage should not be housed in windowed offices unless it is combination with other uses with personnel.

The following types of materials are appropriate for on-campus storage:
- Materials that require short-term storage due to a renovation project or an office move/remodel (moving costs are generally covered by project budget);
- Documents or materials required for grants and/or research projects (the time frame required must be specified);
- Documents or materials required for personnel or legal actions (the time frame required must be specified);
- Materials required for teaching laboratories, classroom use or other educational uses.
- Materials necessary to the academic mission of the (school/area) which may include working equipment, furniture, library materials.

The following types of materials should not, in general, be stored on campus:
- Chemicals or hazardous waste
- Non-working equipment
- Empty cardboard boxes, crates, computer boxes, packing materials, etc.
- Individual office files or other individual office items (personal furniture, books, etc.)
- Materials belonging to emeritus faculty members
- Non-usable office furniture (such furniture should be surplused)
- Personal property (bicycles, athletic equipment, clothing, luggage, etc.)
- It is advisable that storage assignments be made for a specified period of time, and that storage is culled on a regular basis.
Kitchen Space
Like office service space, kitchen spaces that are developed for small work groups tend to become cramped and poorly organized spaces that are too close to individual work environments. Centralizing kitchens for shared use on each floor of buildings is a preferable way to organize these spaces. This also saves cost in terms of appliance purchase and use, and is more sustainable in terms of energy use.

Galley style kitchens tend to be space efficient and adequate for office settings. Eat-in kitchen areas require more space and should be centralized in buildings as much as possible. They also require careful monitoring to be sure that they are utilized and that clean-up occurs on a regular basis.

Touchdown Space
Touchdown, or hoteling space, is becoming more and more important as NMSU faces the reality of moving administrative and other staff off campus in order to make on campus space available for growing academic programs. Touchdown space is important in assisting staff to accomplish work as they move from the main campus to other campus locations.

As we plan touchdown space, the following are key planning parameters. We look forward to thoughts, input and suggestions as we develop touchdown space on campus.

- Touchdown space should be as centrally located as possible - near entrances to campus, public transportation, parking, coffee, etc.
- Convenience is key, because this is "just in time" office space that is non-territorial in nature. It is shared by many, needs to be easy to find, and helps staff both do their work and maintain connections to main campus colleagues and activities. There needs to be card key access, to permit entry at all hours. Room reservation systems need to be easy to use.
- Touchdown space should be open, light airy, because it is a magnet or destination point. The colors and furniture can be fun and lively - this type of space can look a bit different than other spaces on campus.
- Touchdown space needs to provide the business center elements that people need. This varies group by group but includes: wireless, copiers, fax, land-line phones, printers (with instructions), shredders, plotters, access to coffee, and desk-top computers for stopping in and checking e-mail.
- There are different types of touchdown spaces, facilitating a variety of needs. These include teaming (groups working together), meeting (of all sorts and sizes) and quiet, heads down work. Some types of touchdown might require storage space for personal items and work that is in process.
- Furniture needs to be highly adjustable and very flexible, particularly the chairs and work surfaces. Everything needs to have a "plug and play" ease of use. Whiteboards to share information can be very helpful.
- There needs to be a "back-up" plan for when touchdown space gets full- perhaps a conference room that is easily converted into more group space, etc.
- Etiquette about how to use touchdown space is very important. There needs to be rules and norms in place about touchdown use, voice levels, and scheduling priorities. Open communication is key. Etiquette evolves as the space is used more and more, and as people adjust to touchdown concepts.
- People need training about how to use touchdown space, which includes the etiquette mentioned above as well as technology resources. There needs to be the appropriate support and staff resource to facilitate this training and ongoing evaluation.
REFERENCE DOCUMENTS

Office Sizes - Comparative Guidelines
The chart below shows comparative guidelines from a selected group of colleges and universities, related to office size. The notes below explain and expand upon the chart.

Range of Sizes for Offices

<table>
<thead>
<tr>
<th>Office Category</th>
<th>Stanford nasf</th>
<th>Cornell nasf</th>
<th>SUNY nasf</th>
<th>WICHE nasf</th>
<th>CPEC nasf</th>
<th>U.C. Berkeley nasf</th>
<th>FEPG nasf</th>
<th>Univ. Indiana nasf</th>
<th>Univ. Minn. nasf</th>
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<td>President/Provost</td>
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<td>400</td>
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<td>Vice President/</td>
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<td>Min. 200</td>
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<td>240-400</td>
<td>240-400</td>
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<tr>
<td>Dean/Prog. Director/Division</td>
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<td>Dept Chair/Faculty(Studio/Office)</td>
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<td>75</td>
<td>140</td>
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</tbody>
</table>

SUNY = State University of New York
WICHE = Western Interstate Commission for Higher Education
CPEC = California Postsecondary Education Commission
Office Size Table

- Same size as a Faculty Office unless the Department Chair has need for more meeting or administrative space, in which case the office may be larger.
- Space shown with slash represents space guideline per person for single I double occupancy.
- Faculty offices of 140 NASF + 40 NASF for support staff+ 10% for service/storage. 195 NASF
- Assumes 2 people per office typically. Emeritus faculty could be 1 or 2 persons per office.
- Alternative is cubicle environment with 80 NASF I person.
- 80 NASF /person for multiple occupancies in cubicle environment or in shared enclosed office spaces.
- Area I person in multiple occupancies or cubicle environment.
- Assumes a minimum of 2 persons per office.
- Office sizes without the pro rata share of conference space and support allocated by these universities.
- See below.

Classrooms - Comparative Guidelines

Assignable Square Feet per Student Station in Classrooms

Many sources report ranges of Assignable Square Feet per Student Station.

The following table presents a range of classroom seating space from sources referenced in Cornell University's Guidelines. (ASF is the same measure as "NASF" - Net Assignable Square Feet.)

Table from the "Space Planning Guidelines" of Cornell University, Ithaca Campus, 1994, page 8.

<table>
<thead>
<tr>
<th>Room Type</th>
<th>Cornell Guidelines ASF per seat</th>
<th>SUNY ASF per seat</th>
<th>WI CHE ASF per Seat</th>
<th>California ASF per seat</th>
<th>MIT ASF per Seat</th>
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</tr>
<tr>
<td></td>
<td>40-49 15-16 16 14-16</td>
<td>15</td>
<td>17 w/tablet arms</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>50-59 14-15 16 14-16</td>
<td>15</td>
<td>13-14; theater</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>60-99 13-14 16 13-15</td>
<td>15</td>
<td>12-13; theater</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>100-149 12-13 13 11-14</td>
<td>15</td>
<td>11-12; theater</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>150-299 10-12 12 10-14</td>
<td>15</td>
<td>11-12; theater</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>300-500 10-12 12 9-12</td>
<td>15</td>
<td>11; theater</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

SUNY = State University of New York
WI CHE = Western Interstate Commission for Higher Education
California = California Postsecondary Education Commission
MIT= Massachusetts Institute of Technology

* Service, aisle and instructional spaces are included in the ASF per seat guidelines
** Seminar guidelines can also be used to size conference rooms located within office complexes
*** ASF/S guidelines for classroom and lecture hall seating assumes use of folding table arm writing surfaces. Guidelines for small seminar rooms assume seating at tables.
The following table presents the range of Classroom Size Standards used by the State of Washington. Reference: Table 1, Facilities Evaluation and Planning Guide, October 1994, p. 100-5.

Classroom Assignable Square Feet per Station Criteria
Includes Classroom Service
From Washington State Facilities and Planning Evaluation Guide

<table>
<thead>
<tr>
<th>Room Capacity</th>
<th>Moveable Chairs w/Tablet Arm (TA)</th>
<th>Fixed Pedestal or Riser Mounted Seating w/TA</th>
<th>Auditorium Seating w/ TA Folding Non-Folding</th>
<th>Movable Table and Chairs</th>
<th>Pedestal Table and Chairs</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 - 25</td>
<td>18 20</td>
<td>17</td>
<td>--</td>
<td>16 - 26</td>
<td>20 - 22</td>
</tr>
<tr>
<td>26 - 49</td>
<td>16 18</td>
<td>17</td>
<td>--</td>
<td>16 - 26</td>
<td>18 - 20</td>
</tr>
<tr>
<td>50 - 99</td>
<td>14 16</td>
<td>13</td>
<td>14 17</td>
<td>16 - 22</td>
<td>18 - 20</td>
</tr>
<tr>
<td>100 - 149</td>
<td>--  --</td>
<td>12</td>
<td>14 15</td>
<td>16 - 22</td>
<td>18 - 20</td>
</tr>
<tr>
<td>150 - 299</td>
<td>--  --</td>
<td>--</td>
<td>14 15</td>
<td>16 - 22</td>
<td>17 - 19</td>
</tr>
<tr>
<td>300+</td>
<td>--  --</td>
<td>--</td>
<td>14 15</td>
<td>16 - 22</td>
<td>16 - 18</td>
</tr>
<tr>
<td>Overall Average</td>
<td>16 14</td>
<td>14</td>
<td>14 15</td>
<td>20</td>
<td>18</td>
</tr>
</tbody>
</table>

In March 2008, the Stanford University Registrar office and Department of Capital Planning and Space Management co-chaired a team that produced an Instructional Space Master Plan. The following pages contains the Executive Summary section from the Instructional Space Master Plan.

**Research Space- Comparative Guidelines**

With the exception of Cornell University and its 1994 Space Guidelines study, and the CPEC State of California guidelines, none of the other universities or sources provide research space planning guidelines based on type of research space, as opposed to academic disciplines. Nearly all the other guideline documents provide extensive listings of assignable net square feet per station for numerous (ranging from dozens to over 100) separate and distinct academic disciplines. The range of NASF/station varies from magnitudes of 35 or 40 NASF/per station for some disciplines (communications, social sciences, history, mathematics) to around 200 NASF/per station for some engineering and science disciplines.

The Minnesota Facilities Model for the University of Minnesota, July, 2000, presents a simple table of research space guidelines, as follows:

**Research Allowance Ranges**

<table>
<thead>
<tr>
<th>ASF /Researcher</th>
<th>Disciplinary Areas</th>
</tr>
</thead>
<tbody>
<tr>
<td>20-50 NASF</td>
<td>Humanities &amp; most Social Sciences</td>
</tr>
<tr>
<td>50 - 150 NASF</td>
<td>Clinical Social Science, Law</td>
</tr>
<tr>
<td>150 - 300 NASF</td>
<td>Physical, Life &amp; Health Sciences</td>
</tr>
<tr>
<td>300 - 450 NASF</td>
<td>Engineering, Agriculture, Forestry</td>
</tr>
<tr>
<td>450 - 600 NASF</td>
<td>Veterinary Science</td>
</tr>
</tbody>
</table>

The California Postsecondary Education Capacity (CPEC) space analysis study of 1990 presented the following table, which provides a more complex set of space guidelines than the Cornell study. Note that the numbers on the following table apply to "State Supported" research activity, which implies separately funded research activities which may be very different from more typical university-based research lab needs.

The following table was excerpted from the CPEC study, p. 109. The specific source in that document is listed as the University of California, Office of the President; and Commission Staff.

### University of California Research Space Standards

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
<th>NASF per State Supported FTE Faculty</th>
<th>NASF per Graduate Student</th>
<th>NASF per Postdoctoral Fellow</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>Complete wet and dry laboratories, typically assigned to research teams. High density of utility services, fume hoods, other built-in equipment, bench space and movable equipment. Requires service areas &amp; support space ranging from 25 - 50% of core labs.</td>
<td>500</td>
<td>250</td>
<td>250</td>
</tr>
<tr>
<td>II</td>
<td>Labs generally requiring fewer laboratory services and less bench space for individual work stations. Greater proportion of core laboratories shared among research teams, often housing bulky experimental apparatus. Requires service areas and support space ranging from 10 - 25% of core laboratories. Faculty &amp; graduate students also involved in field research.</td>
<td>350</td>
<td>175</td>
<td>175</td>
</tr>
<tr>
<td>III</td>
<td>Large individual studios for faculty and graduate student creative activity, usually occurring on a solo basis. Specialized support areas required for specific equipment-based techniques, such as photography, computing arts, or media editing.</td>
<td>500</td>
<td>250</td>
<td>250</td>
</tr>
<tr>
<td>IV</td>
<td>Small individual studios and shared rehearsal facilities, production studios and project areas. Accommodates both solo and group activities. Specialized facilities often used on a shared basis for teaching, research, and performance activities. Special storage facilities required.</td>
<td>150</td>
<td>150</td>
<td>150</td>
</tr>
<tr>
<td>V</td>
<td>Combination office and lab-based research activities. Labs, project rooms, or observational/practice facilities often shared among several research teams. Limited service areas with some special storage needs.</td>
<td>150</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>VI</td>
<td>Office-based research activities requiring computer support, group project rooms, reading/study areas. Limited service and support needs.</td>
<td>50</td>
<td>50</td>
<td>50</td>
</tr>
</tbody>
</table>

Note: Space allowances per faculty, graduate student, and postdoctorate include all service and support space.
Research Lab Space Planning Guidelines
The basic wet lab planning module only addresses the space inside an actual wet lab research laboratory. It does not address other kinds of lab space, nor does it account for the office, support, equipment and storage space that must accompany research lab space to make it functional.

Cornell University has done a detailed study for five categories of research lab space and has proposed guidelines which address the amount of space per person, or per station, which each type of lab might require, including a pro rata share of office, storage, shared equipment and other support space. These areas are based on extensive empirical research which Cornell conducted on its own campus and with other institutions. Presented on the table below are the guidelines proposed in the 1994 Cornell Space Planning Guidelines. These guideline numbers provide a good comparative measure for Stanford’s research lab planning.

<table>
<thead>
<tr>
<th>Category</th>
<th>Research Lab Type</th>
<th>Cornell Guidelines</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td><strong>Computer Research</strong>&lt;br&gt;Office based research with computer support. Limited service and support needs.</td>
<td>160</td>
</tr>
<tr>
<td>2</td>
<td><strong>Studio-based Research -- Design Workstation</strong>&lt;br&gt;Individual studio research space.&lt;br&gt;For design activity requiring:&lt;br&gt;a. Drafting table, stool, and side table, or&lt;br&gt;b. Easel and stool&lt;br&gt;The module area includes space for only one individual.</td>
<td>200</td>
</tr>
<tr>
<td>3</td>
<td><strong>Science Laboratory, Module Type</strong>&lt;br&gt;A. <strong>Wet Lab</strong>&lt;br&gt;Space including shared equipment and service areas.&lt;br&gt;The shared equipment/service areas approximate 30 to 50 nasf.&lt;br&gt;B. <strong>Dry Lab</strong>&lt;br&gt;Space including shared equipment and service areas.&lt;br&gt;The shared equipment/service areas approximate 30 to 50 nasf.</td>
<td>200, 160</td>
</tr>
<tr>
<td>4</td>
<td><strong>Special Equipment Lab</strong>&lt;br&gt;Reserved for laboratories which are too extensive in their space requirements because of special research activities.</td>
<td>Custom Design</td>
</tr>
</tbody>
</table>

Cornell notes that these guidelines should be evaluated annually since research needs change constantly. To help derive and validate the guidelines presented in the preceding table, Cornell conducted a study of the net assignable square feet per station in *actual* lab buildings on its campus. The study data revealed the following:
- The actual range of space per station in Office/Computer Labs was 170 to 175 NASF/station.
- Recommended is 160 NASF.
- The actual range of space per station in Studio Labs was 311 to 428 NASF/station.
- Recommended is 200 NASF.
- The actual range of space per station in the Science Wet Labs was 188 to 238 NASF/station.
- Recommended is 200 NASF.
- The actual range of space per station in the Special Equipment Labs was 289 to 758 NASF/station.
- Cornell recommends planning for these kinds of labs on a case-by-case basis.
**Comments**

- Some guidelines define overall office space per FTE by recommending the office size in NASF, plus an additional amount of space for administration, service and storage. This also sometimes includes pro rata space for conference rooms.

- The CPEC Guidelines for the University of California recommends a space guideline of 140 NASF for the office itself (as shown on the chart above), plus 40 NASF for Administration, plus a 10% premium of both these for a total office area of 195 NASF. Thus, for planning and design purposes, the average area required for office space for the U.C. system is 195 NASF per FTE, which includes more than just the size of the office itself. Washington State's FEPS also recommends 195 NASF per FTE, based on a 140 NASF faculty office.

- University of California, Berkeley, UC Berkeley calculates faculty office space as 150 NASF for the office, plus a pro rata space of 10 NASF for conference rooms, 45 NASF for support, and 20 NASF for service, totaling 225 NASF for aggregate office clusters.

- The University of Minnesota Model assigns 120 NASF per FTE for a standard faculty office, and then adds 30 NASF for service areas like "reception areas, conference rooms, file storage, copy rooms, work rooms, and staff lounges." The actual office size is 120 NASF, but the additional 30 NASF per person provides a pro rata share of all the additional support space required for a cluster of offices.

- The approach used by these universities provides useful guidelines for estimating overall office space/FTE for clusters of offices in a new building or in major relocations. This kind of guideline also helps to assess blocks of office space in existing locations. However, the individual standard for a faculty office (140, 150 and 120 NASF respectively for California or Washington, U.C. Berkeley, and Minnesota) are the numbers comparable to Stanford's faculty office guideline.

- All of the sources which provide guidelines for office areas note that the spaces listed are general guidelines only, not standards. Existing conditions, especially in older buildings, often make adherence to office standards difficult or impossible. Structural systems, building utilities and window locations frequently prevent offices from being sized accurately to meet new standards. Building configurations may force offices to be either larger or smaller than the standard, necessitating design accommodations on a case-by-case basis.