



Office of Classroom Management  
Office of Undergraduate Education

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UNIVERSITY OF MINNESOTA  
**Driven to Discover**<sup>SM</sup>

# Appendix DD to the University of Minnesota Construction Standards

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## **1 - Introduction**

As the major sites of instruction at the University of Minnesota, classrooms are critical to achieving the University's missions of teaching and learning and research and engagement. A well-designed classroom can improve learning by enhancing intelligibility of information presented, encouraging student engagement in presented material, reinforcing student and instructor morale, and facilitating the physical well-being of students and instructors.

Classrooms at the University of Minnesota fall into two categories: departmental classrooms and general purpose classrooms. Departmental classrooms serve the specialized needs and requirements of a specific department, discipline, or program and are managed and scheduled by their respective departments. General purpose classrooms, however, are centrally managed and scheduled and must be flexible and responsive to the varying needs of a wide range of subjects and teaching styles. This document addresses general purpose rooms, but the guidelines herein can be applied to other spaces as cogent University officials deem appropriate.

**The Office of Classroom Management (OCM) is the central point of contact for all general purpose classrooms (GPCs) on the Twin Cities Campus. OCM is responsible for the planning, specification, operation, scheduling, and coordination of maintenance of these GPCs. Given the complexity of design issues in classrooms, collaboration between OCM and architects/engineers (A/E) is necessary at every phase of the design process.**

The classroom environment involves many elements, including, but not limited to, acoustics, lighting, heating/ventilation/air-conditioning (HVAC), furnishings, audio/visual (A/V) systems, building codes, and the Americans with Disabilities Act (ADA) requirements. The following sections provide standards for these areas in GPCs, as well as guidelines for meeting these standards.

These guidelines do not represent or supersede any applicable federal, state, or local building codes or civil rights legislation. All current applicable codes, as well as the University of Minnesota Construction Standards, should be consulted and considered in concert with these guidelines, and conflicts shall be resolved through discussion with OCM and the responsible code official.

Currently, there are over 300 GPCs in more than 50 buildings across the Twin Cities campus within OCM's purview. OCM's goal is to make each of these rooms the best it can be, to create a welcoming, stimulating, and success-promoting environment for every student and faculty member who passes through the University of Minnesota.

## **2 - Design guidelines**

The success with which a student may receive and retain information from an instructor, or effectively participate in classroom activities, is greatly affected by general factors of classroom design. Site planning and overall building spatial relationships set the stage for development of effective teaching and learning environments. Whenever possible, classrooms should be located no more than one level above or below the “street” floor. This improves student access to classrooms, reduces traffic loads on elevators and stairwells, and minimizes disruption among multiple functions in a building.

Classrooms should be isolated from external and internal sources of noise, such as loading docks, parking lots, streets, mechanical and equipment rooms, vending areas, elevators, and dining facilities.

The design of new building approaches, entrances, exits, stairs, and corridors should consider the locations of classrooms. Corridor design should take into account that students generally arrive and depart in large groups (see section 4.2). Classroom doors should not be located directly across from each other, to minimize congestion as classes let out. Classrooms should be located near exterior doors to improve the flow of traffic and make classrooms easier to locate.

Additionally, Active Learning Classrooms (ALCs) have special design requirements due to the level of technology employed. These include proportioning the room to allow sufficient wall space for the necessary monitors and planning table layouts to allow for appropriate viewing distances and circulation.

**These guidelines cannot address all parameters that apply to all possible classroom scenarios, but they provide the basis for GPC design. It is essential that the architect and/or engineer (A/E) and OCM collaborate on specific needs, issues, and solutions early in the design process to achieve a favorable outcome in each classroom.**

Informal learning spaces, also known as study spaces or Waypoints, are also important learning environments for students, as they promote interaction and collaborative thought. These spaces are discussed in more detail in section 11 of this document.

### 3 - Dimensional requirements

Classrooms should be designed from the inside out, rather than by forcing classroom functions into spaces determined by the building. Overcrowded classrooms are not conducive to effective learning. OCM's guidelines for square footage (SF) per student are listed in the following table:

Furniture type	Minimum SF per student
Fixed drop-arm seating	15
Fixed linear bench table	16
Tablet-arm chairs	18
Movable tables and chairs	22
Seminar/conference table	24

**Projected images are one of the critical teaching instruments in University classrooms, so projection requirements are major factors in laying out a classroom. See figures 1-6 for the basic layout of projected images and seating.**

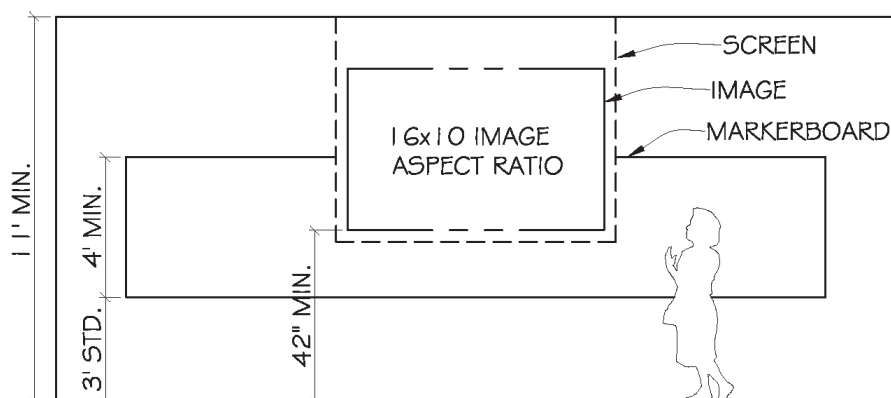


Figure 1, Front wall elevation with standard measurements.

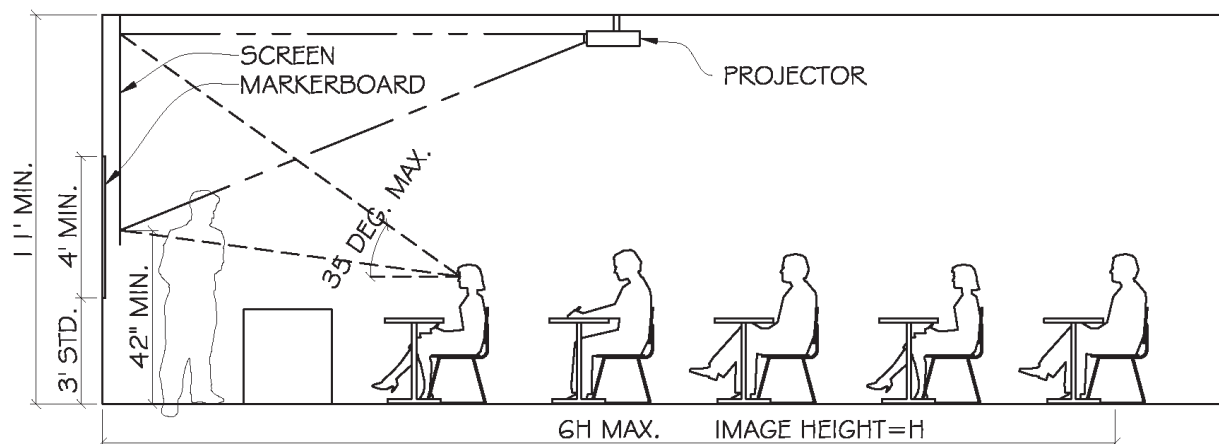


Figure 2, Flat floor room section with standard measurements

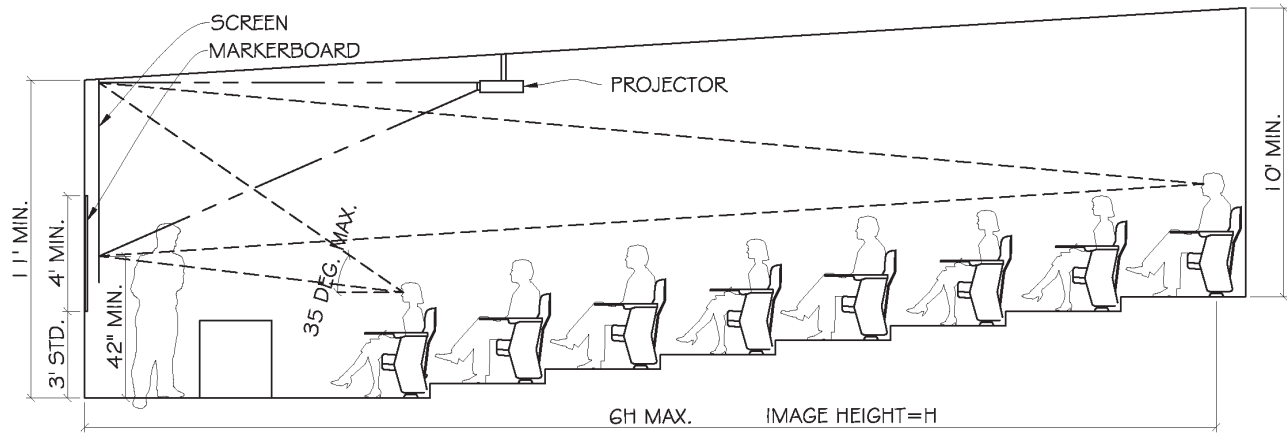


Figure 3, Tiered floor room section with retractable screen, with standard measurements

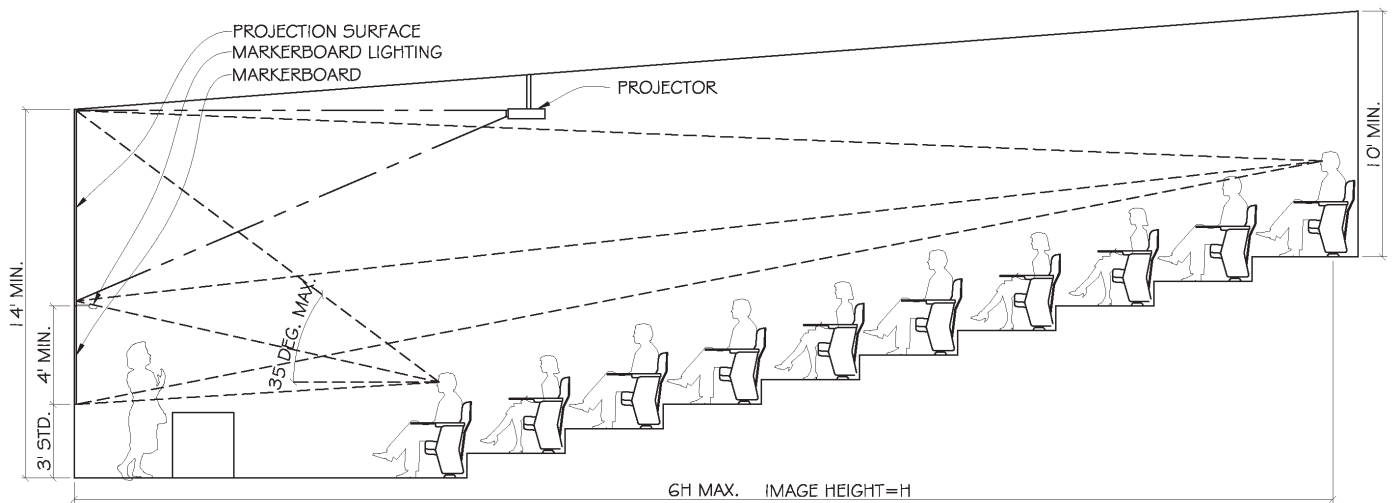


Figure 4, Tiered floor room section with wall projection, with standard measurements

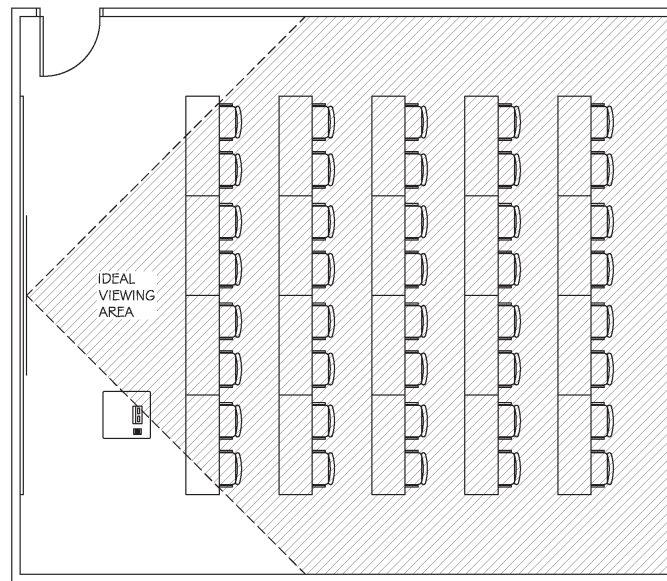


Figure 5, Ideal projection viewing area for single projection.

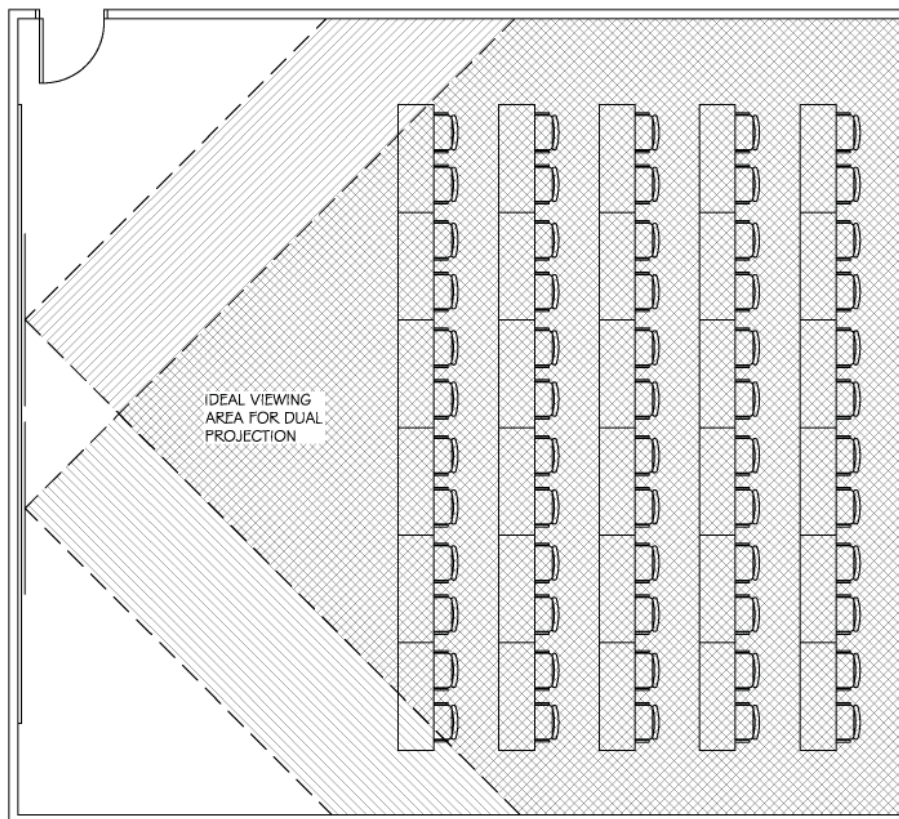


Figure 6, Ideal projection viewing area for dual projection.

Compromise between the ideal cone of vision and necessary seating capacity will be evaluated on a by-room basis.

## **4 - Classroom types**

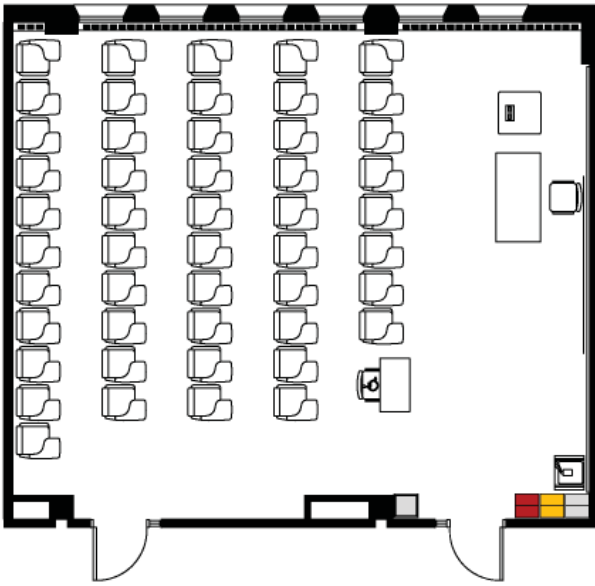
Within the large range of classrooms on campus, several general types emerge, based on class size, pedagogy, and programmatic needs. All new or renovated GPCs must meet the Projection Capable Classroom (PCC) standard (see section 8), with other technological or equipment needs to be determined on a by-room basis. For representative floor plans and additional details of these room types, see section 4.1.

- General classroom, movable furniture: a flat-floored teaching space with a capacity of 24-90 students, with movable furniture for flexibility of use. Suitable for many purposes, the most common type of classroom.
- General classroom, fixed furniture: a flat-floored teaching space with a capacity of 24-90 students, with fixed tables and/or seating. Various table layouts are employed to suit different types of use.
- Seminar room: a flat-floored teaching space for small-section courses with a capacity of fewer than 24 students. Most suitable for small-group discussion and highly interactive material.
- Lecture hall: a tiered or sloped teaching space with a capacity of 30-200 students. Most suitable for traditional lectures, multimedia presentations, basic distance learning, and demonstrations.
- Auditorium: a tiered teaching space with a capacity that exceeds 200 students. Most suitable for traditional lectures, multimedia presentations, distance learning, and demonstrations.
- Active Learning Classroom (ALC): Provided with grouped seating for students and a very high level of technology, this room type is designed to maximize student interaction and engagement. These rooms are often divisible to accommodate different needs from semester to semester.

### **4.1 - Classroom type examples**

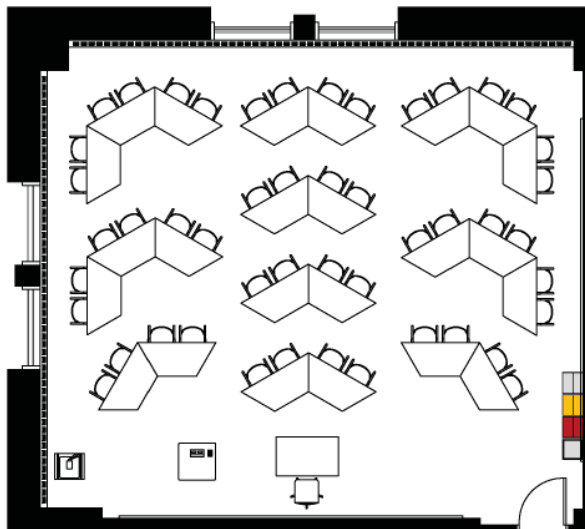
The following examples are actual classrooms on the U of M campus. They are rooms that come as close to the guidelines in the document as possible, but the guidelines themselves should be referenced, rather than citing one of these sample rooms as a template.

### General Classroom, movable furniture:



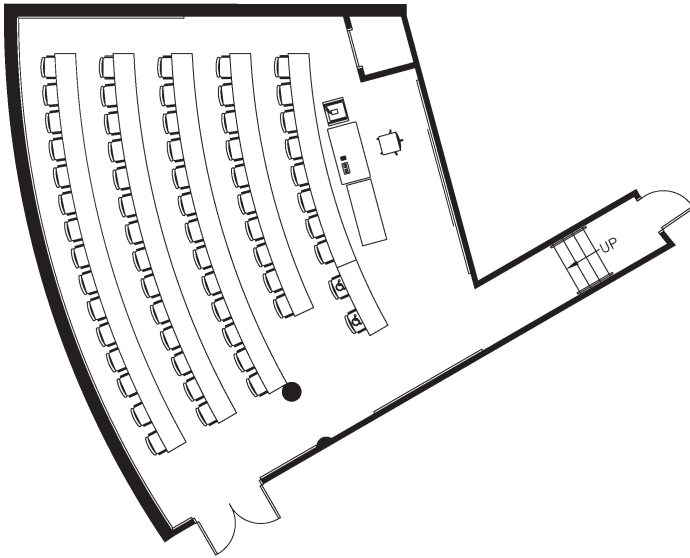
#### Blegen Hall 215

- 50 capacity, 903 square feet
- Tablet-arm chairs

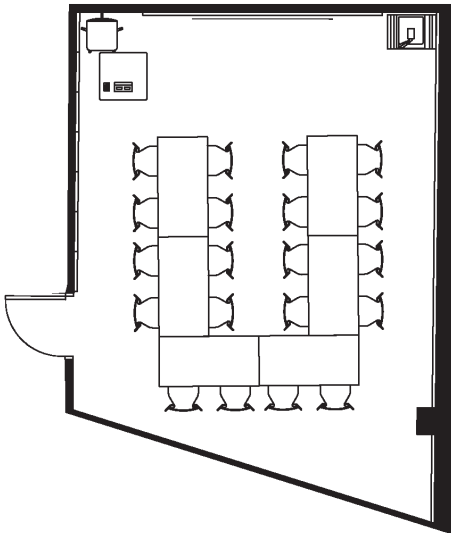


#### Nicholson Hall 115

- 48 capacity, 1063 square feet
- Movable tables and chairs
- Alternate table layouts possible

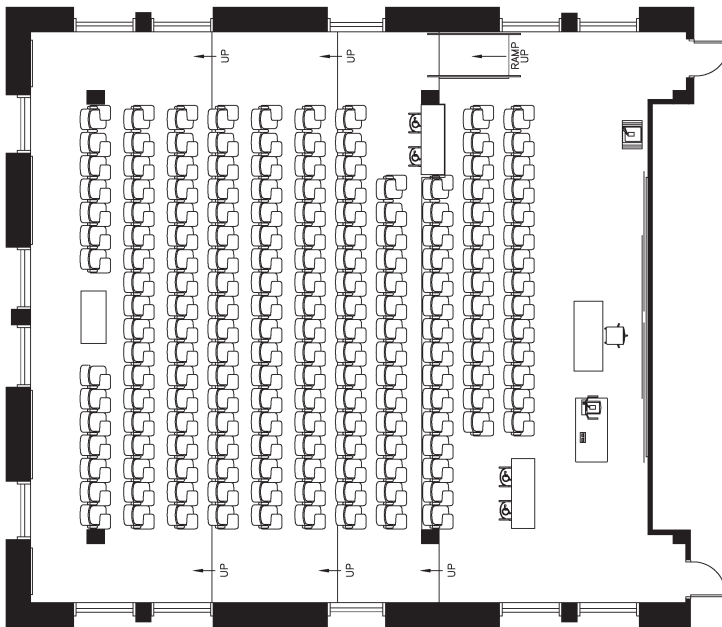
**General Classroom, fixed furniture:****Civil Mineral Engineering 212**

- 62 capacity, 1178 square feet
- Fixed tables and movable chairs

**Seminar room:****Ralph Rapson Hall 15**

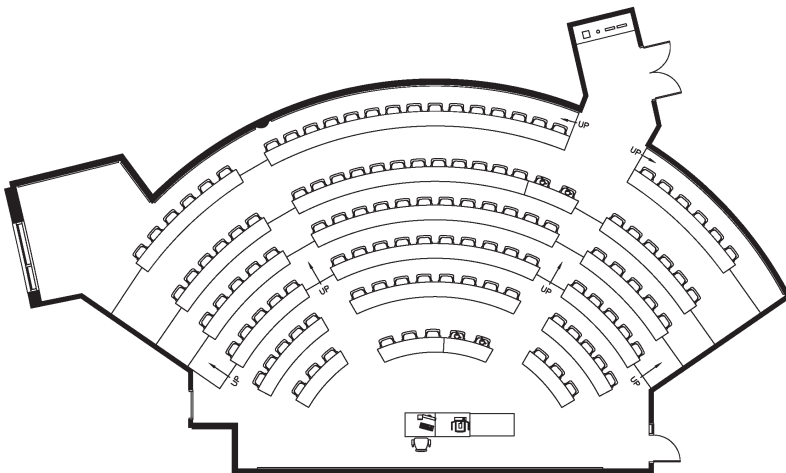
- 20 capacity, 413 square feet
- Movable tables and chairs

## Lecture Hall:



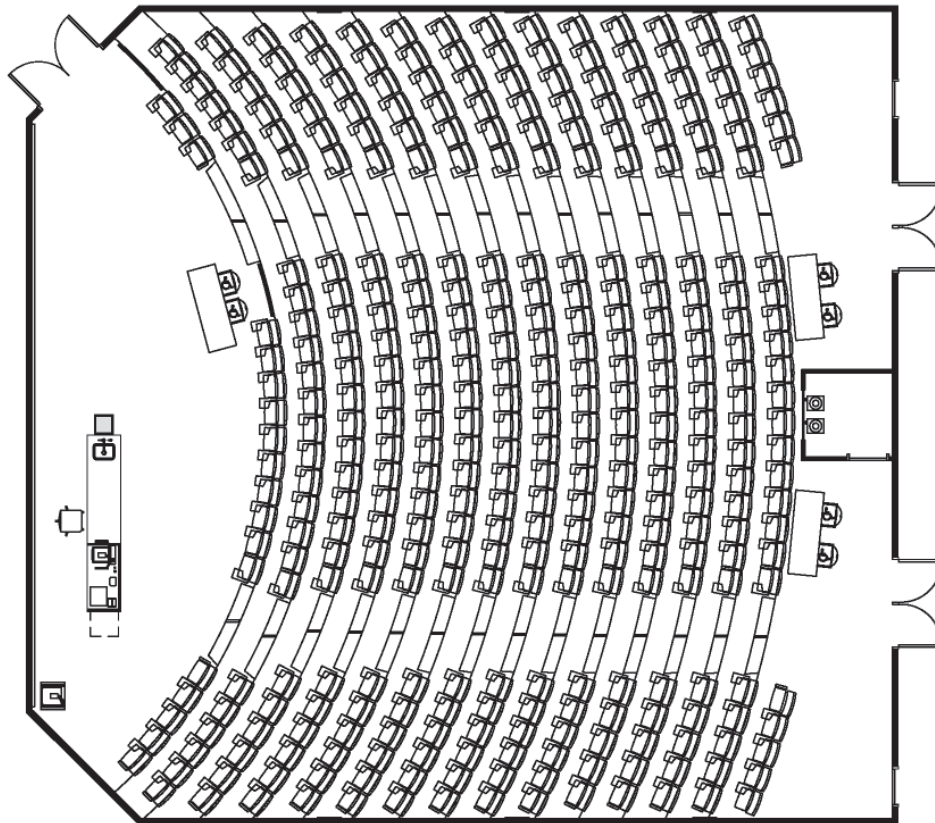
## Nicholson Hall 155

- 184 capacity, 2645 square feet
- Drop-arm fixed seating
- Triple projection

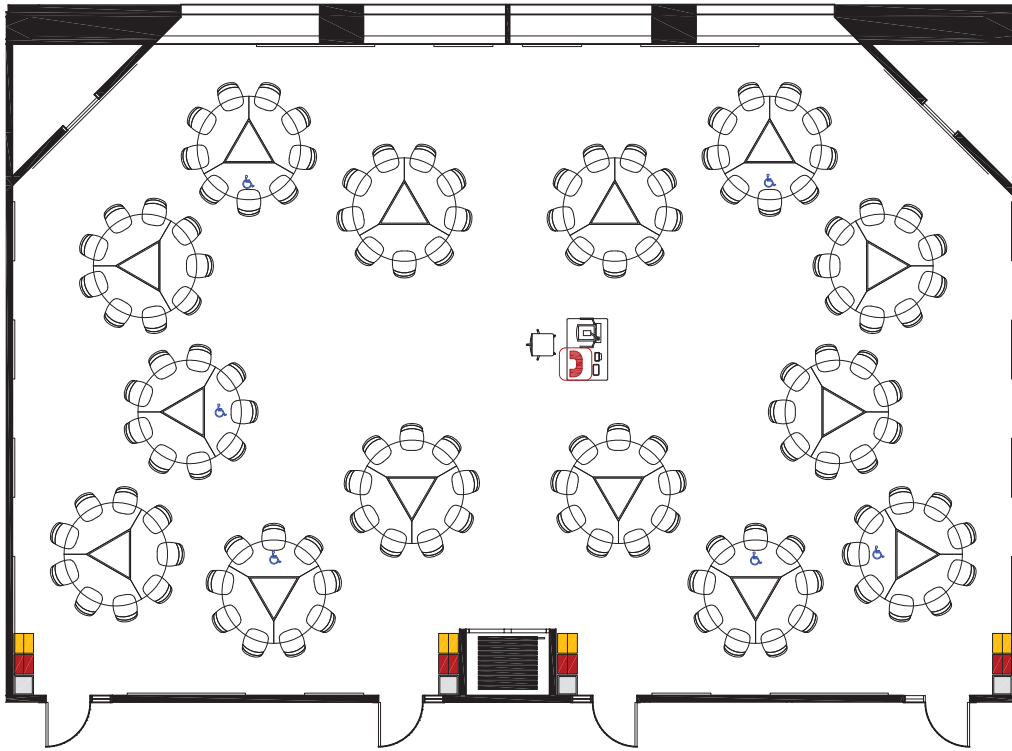


## Herbert M. Hanson Hall 1-108

- 124 capacity, 2687 square feet
- Fixed tables and movable chairs
- Dual projection

**Auditorium:****Smith Hall 100**

- 357 capacity, 3339 square feet
- Drop-arm fixed seating
- Dual projection

**Active Learning Classroom:****Science Teaching & Student Services 312**

- 126 capacity, 2859 square feet
- Movable tables and chairs with fixed technology pedestals
- Advanced technology capability
- Divisible with movable partition

## **4.2 - Adjacent spaces**

The nature of classrooms requires large groups of students to circulate frequently. Accordingly, corridors should be double-wide and should include seating, whenever possible, to accommodate students waiting for classes or meeting informally. Corridors should also be considered as potential learning spaces, possibly including marker boards, study alcoves, or other amenities.

## **4.3 - Ancillary Spaces**

In order to minimize downtime or capacity loss in the case of a furniture failure, OCM maintains an attic stock of all furniture types and miscellaneous parts and tools for maintaining classroom furniture. Service spaces are required in classroom buildings to store these items and give OCM staff areas to stage furniture moves and repairs. A minimum of 100 SF or sufficient space to store 2% of the student furniture utilized, whichever is larger, should be provided in any classroom building. It is preferable to have one large room rather than several small ones, and no storage room should be less than 40 SF. It is preferred that these spaces be accessed via corridors (rather than being located inside classrooms) and that there is good access to the loading dock and elevator. Doors should be at least 36" wide, clear of door hardware, to allow for movement of large items.

Space may also be required to accommodate A/V equipment. This space is in addition to the storage space noted above, and requirements will vary by room.

## **5 - Documentation**

In accordance with University construction standards and project procedures, OCM shall receive a physical or electronic copy of all review documents. Operation and maintenance manuals (O&Ms) and as-built drawings shall be provided upon completion of a project.

All design changes must be executed in writing and submitted through the appropriate project authority to be considered valid. OCM shall also receive samples of all selected finishes and furniture for approval prior to order placement.

## **6 - Lighting requirements and testing procedures**

Effective learning spaces need high quality lighting. Lighting should be uniform throughout the room and flexible to allow for multiple teaching modes. The testing procedures listed below define light level standards, and figures 7 and 8 (p. 17) illustrate the various lighting zones typically used in classrooms. Lighting calculations for proposed systems must be provided during the design process.

The presentation writing surface shall be illuminated to 15fc above the general light level. Light shall be uniformly distributed across the entire writing surface. Luminaires shall be selected and installed such that the lamps are not directly visible from the student or instructor viewpoint. Presentation luminaires shall not interfere with the movement of a projection screen. If luminaires are behind a projection screen when it is lowered, those luminaires shall be separately controlled.

All luminaires and lamps must be energy efficient and specified so as to minimize maintenance, especially in high-bay rooms. A Color Rendition Index (CRI) of 85 or better is preferred.

Basic lighting controls shall be placed at all entrances to GPCs. Controls for all room lighting shall be available at the instructor station, either on an adjacent wall or integrated into the A/V control system. Occupancy sensors shall be provided to turn off lighting after an appropriate period of inactivity. These sensors shall be dual-technology (motion and sound-based detection) and have the capacity for future expansion to additional systems. See University Energy Management for a current specification.

### **General illumination standard:**

- **Mean reading of 45fc is preferred,  $\pm 5$ fc is acceptable.**
- **Deviation from mean of less than 10fc is acceptable. Deviation in excess of 10fc shall be noted and corrected.**

#### Conditions:

- Lights on at full capacity
- Room shades and blinds closed

#### Data acquisition:

- Divide floor into 3 by 3 grid pattern, evenly dispersed across the student seating area.
- Measure light level at table height of 30 inches above the finished floor (AFF).

#### Equipment:

- Minolta T-10 light meter or equivalent

**Reduced, note-taking illumination standard:**

- **10fc is preferred,  $\pm 5$ fc is acceptable. All readings shall be mean averaged and noted.**

## Conditions:

- Lights on at low volume
- Room shades and blinds closed

## Data acquisition:

- Divide floor into 3 by 3 grid pattern, evenly dispersed across the student seating area.
- Measure light level at table height of 30 inches AFF.

## Equipment:

- Minolta T-10 light meter or equivalent

**Glare contrast standard:**

- **Contrast ratio of 3:1 or less.**

## Conditions:

- Lights on at full capacity
- Room shades and blinds closed

## Data acquisition:

- Based on the field of view from the middle of the student area, divide the front of room in a 5 by 2 grid pattern evenly dispersed across the field of view.
- Note light levels in each grid space.
- Note brightest point in field of view as peak reading.
- Average the light levels and compare to the peak reading.

## Equipment:

- Minolta LS-100 or equivalent

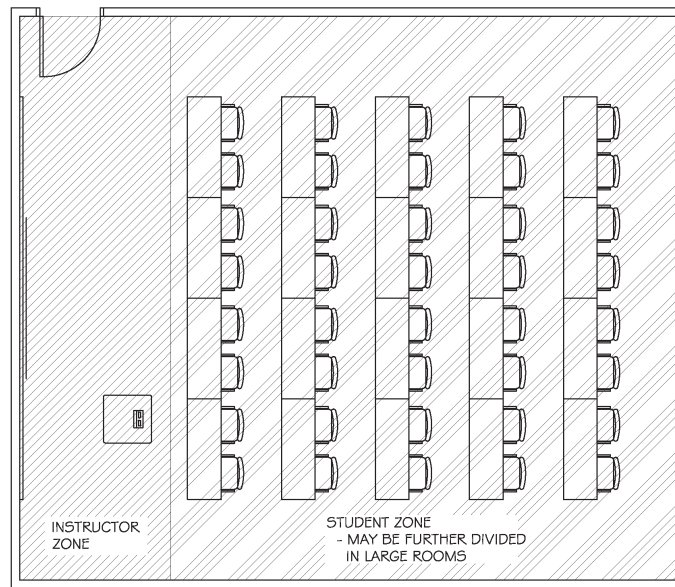


Figure 7, Lighting zones in general classrooms and small group rooms.

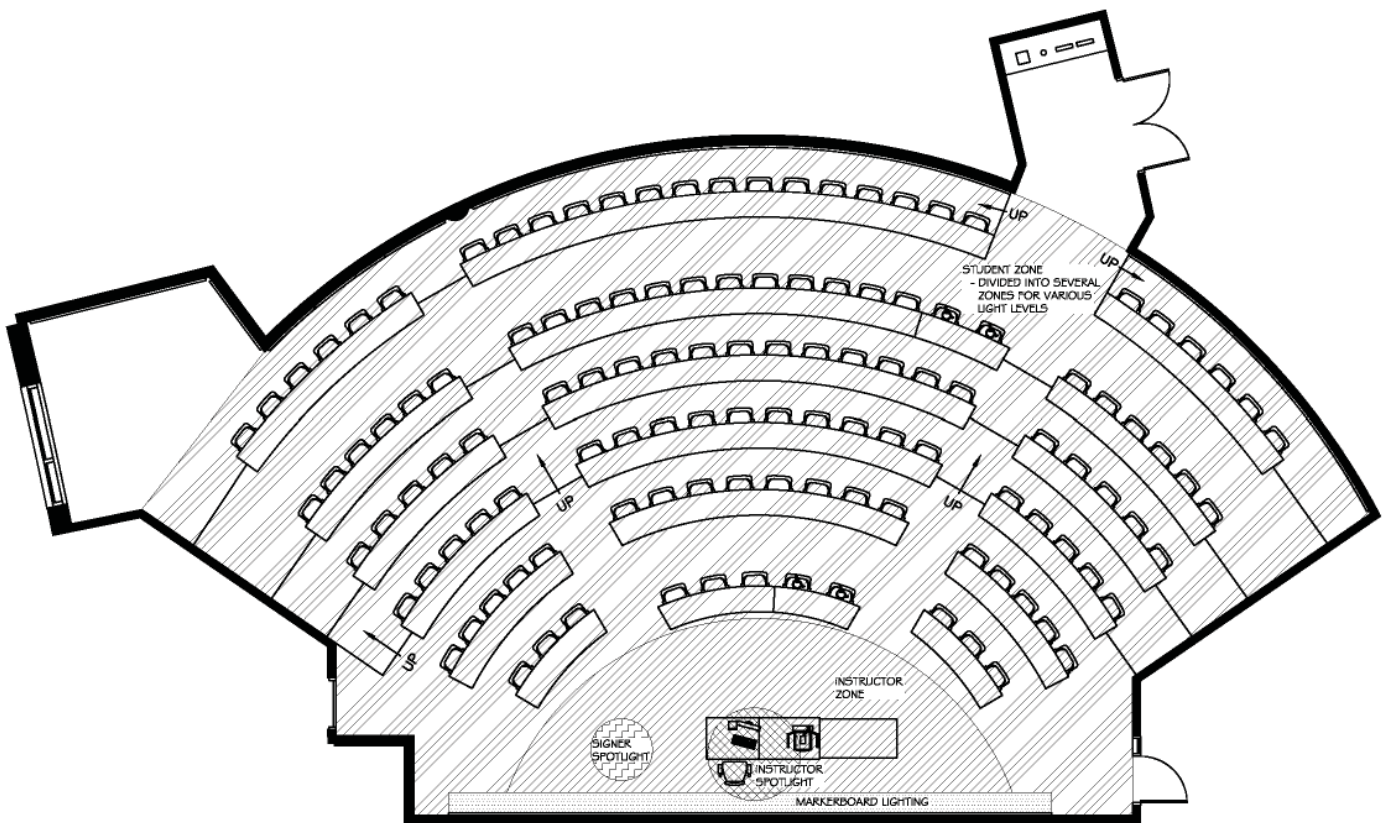


Figure 8, Lighting zones in lecture halls and auditoriums

## **7 - Acoustical requirements and testing procedures**

Two major ratings are used to determine the acoustic qualities of a classroom: noise criteria (NC) and reverberation time (RT60). See procedures listed below for acceptable standard ratings. Both standards must be met for a room to be considered acceptable.

The NC rating of a space is a reference to a standardized chart comprising frequency vs. sound pressure (dB) curves. NC curves apply to sound pressure levels in an occupied space, not to equipment sound power levels.

The RT60 of a space refers to the time required for the sound level in the room to decay by 60dB. A lower RT60 means less echo and, therefore, improved intelligibility of sounds within the room.

Sound Transmission Class (STC) is a laboratory measurement, referring to the ability of a partition or material to prevent sound from traveling from one side of the partition to the other. The STC of partitions between classrooms, whether permanent, temporary, or movable, must be 50 or better.

Acoustical modeling of proposed spaces is strongly recommended, to avoid costly remediation after construction.

### **Noise Criteria standard:**

- **NC of 35 or less for rooms up to 10,000 cubic feet (CF)**
- **NC of 30 or less for rooms 10,001 to 20,000 CF**
- **NC of 25 or less for rooms 20,001 CF or more**
- **More stringent NC levels may be required for specialized spaces.**

### **Reverberation time standard:**

- **RT60 of 0.60 seconds or less for rooms up to 10,000 CF**
- **RT60 of 0.80 seconds or less for rooms 10,001 to 20,000 CF**
- **RT60 of 1.50 seconds or less for rooms 20,000 CF or more**

#### Conditions:

- Windows and doors closed
- HVAC operating at full load
- Minimal external noise from adjacent locations

#### Data acquisition:

- Microphone at 48 inches AFF, in the center of the room

#### Equipment:

- TerraSonde Audio toolbox or equivalent

## **8 - Technology**

All new and renovated classrooms must meet the current Projection Capable Classroom (PCC) standard. This standard includes, at a minimum, the following capabilities:

- Large-scale, high-quality image, such as from a video/data projector and/or large display monitor
- Wired internet connectivity at the instructor's station
- Networked control system for remote monitoring and access
- DVD player, document camera, and/or other input device
- User-friendly laptop/input device interface
- Assistive listening system for rooms with amplification and 50 or more fixed seats, in accordance with current ADAAG requirements.
- Capacity for additional modular features
- Telephone (any A/V booth space shall also have a telephone)
- Wireless internet access in accordance with U of M Office of Information Technology (OIT) current capacity standard.

Specific technical criteria and equipment will be addressed on a per-room basis. Full program requirements for any given room should be determined with OCM prior to final determination of the room's other design aspects.

**OCM-Classroom Technical Services (CTS) is the preferred vendor to provide drawings and specifications that establish locations for projectors, speakers, etc., as well as the requisite conduit, based on the architectural drawings provided by the A/E or on known existing conditions. Installation of building infrastructure will be the responsibility of the project contractor, while design, installation, and engineering of the audio-visual system will be contracted through CTS.**

Projection screens will be provided by CTS for contractor installation. Screen details will be determined according to the following guidelines:

- Screen dimensions shall allow for a 16x10 projected image ratio.
- Screen sizes 10 feet wide and larger shall be electrically operated.
- Screen controls shall be located at switch height adjacent to lighting controls in the instructor area.
- In renovation, the finished ceiling height shall be raised as far as possible to accommodate screen requirements.
- In classrooms with high ceilings, it may be desirable to use the wall above the presentation writing surface as the projection surface. This option eliminates the necessity of raising and lowering a screen, and the associated control system costs (figure 4, p. 6). In this case, a matte paint with a high Titanium oxide content should be used.

## **9 - Construction and finishes**

Classroom finishes must be carefully selected in order to provide an attractive and stimulating (but not distracting) learning environment. They must also be durable enough to withstand constant use over periods ranging from 10 to 20 years.

**Whenever possible, environmentally sustainable products and building practices will be given preference. All products should be low- or no-VOC, and recycled/ recyclable content should be considered.**

### **Mechanical systems**

The major consideration for mechanical systems in relation to classrooms is noise. All components of mechanical systems should be designed to minimize transmission of noise between classrooms, from corridors, and from exterior sources. Additionally, mechanical components and access paths should not interfere with classroom technology:

- Air ducts should be separated from projection screens to reduce movement.
- Lighting and HVAC layouts must take projectors, speakers, etc. into consideration.
- It is preferred that mechanical systems be accessed from outside the classroom to minimize disruption to courses.

### **Ceilings**

- Ceiling finishes shall be light in color and non-specular, with a light reflectance coefficient (LRC) of 80% or higher.
- Ceiling tile noise reduction coefficient (NRC) shall be 0.95 or better.
- Ceiling attenuation class (CAC) shall be 39 or better.
- Ceiling tiles shall be sag/humidity resistant.

### **Flooring**

- Carpet tile is preferred over broadloom carpet or vinyl tile.
- Classrooms with demonstration areas for chemical or other experiments shall have an epoxy or other resilient finish in the instructor area.
- Floor coverings should be medium to dark in color, with some form of subdued pattern or fleck.
- Choose flooring that complements the acoustical characteristics of the room.

### **Walls**

- Wall partition systems shall run deck-to-deck, with an STC of 50 or better.
- Drywall seams shall be fully taped and caulked to floors, and durable caulking shall be used for all penetrations.

- The front wall shall have no protrusions, to maximize the available presentation writing surface.
- A chair rail shall be installed on side and rear walls whenever movable furniture may contact the wall surface. Height of the chair rail will be determined based on the furniture specified.
- Wall surfaces shall be washable.
- Acoustic treatments may be required to reduce echo. These should be durable, and soft surfaces shall not be installed below 36 inches AFF. Fabrics should be chosen to reduce visibility of wear and soil.

### **Windows and window treatments**

- No windows shall be allowed in the presentation wall.
- Windows shall have an STC rating sufficient to reduce exterior environmental noise levels to meet classroom acoustical standards. (See section 7.)
- Window treatments shall be at least 97% opaque, with roller shades preferred over mini-blinds.
- Roller shades shall be clutch type, chain operated, and have stops set at the full range of motion (top and bottom).
- A combination of treatments may be used if total blackout is required per the program.

### **Doors**

- Doors must operate quietly. Include bumpers, gaskets, and nylon bushings to muffle the noise of doors closing and ensure that minimal noise is transmitted from corridors into classrooms.
- Classroom entrance doors shall have a vision kit installed. The preferred size for vision kits is 24 inches high by 4 inches wide, with the bottom edge 38-42 inches above the floor. Larger openings shall be obscured, with a clear 1 inch border.
- If glass sidelights are used, they must be obscured from 24 inches to 72 inches above the floor. Sidelights do not replace door vision kits.
- All new classrooms shall be provided with at least one centrally administered card access reader approved by the University's Department of Central Security (DCS) at the room's main entrance. Additional entrances shall have electronic locking/unlocking integrated into the card access system.

## Signage

- A General Purpose Classroom sign shall be placed at each entrance to a classroom. (Figure 9.)
- All signage shall comply with the University Graphic Standards.
- Building directories shall identify GPCs and Waypoints (see section 11).
- Control system cover plates, such as lighting and projection screen switches, shall be labeled.

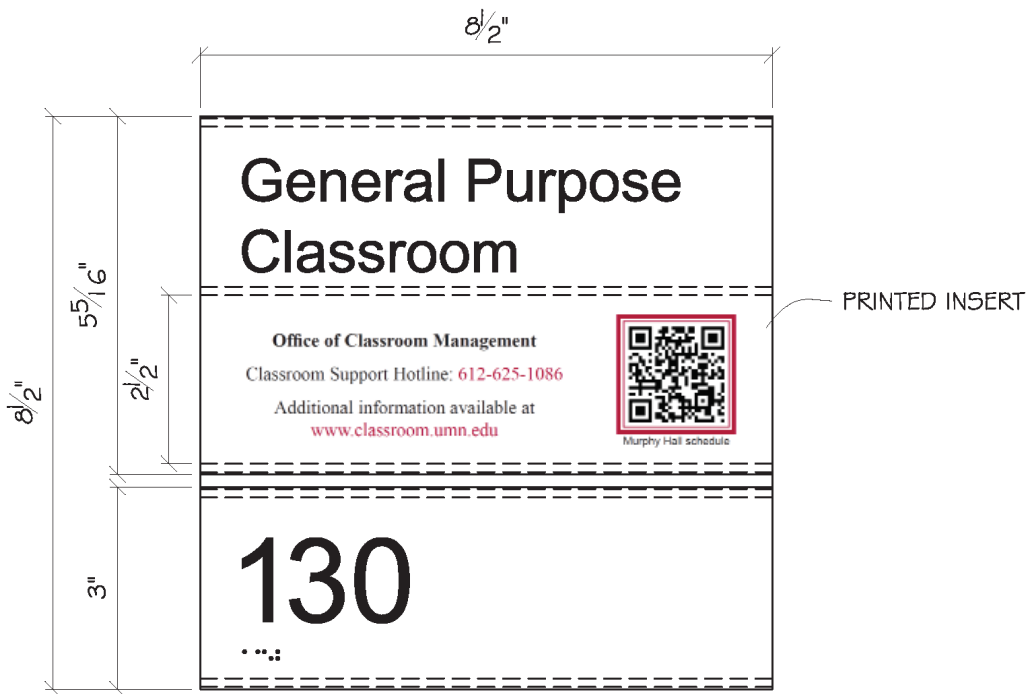


Figure 9, Standard General Purpose Classroom sign

## **10 - Classroom furniture and equipment**

Several seating types are used in classrooms at the University: movable tables and chairs, fixed tables with movable chairs, tablet-arm chairs, and fixed drop-arm seating. All classroom furniture must carry a minimum 10-year warranty, and non-obsolescence provisions must be in place for all materials chosen. Consult with OCM regarding fabric durability and maintenance requirements. Additional furniture comprising 2% of the installed quantity shall be ordered as attic stock.

In general classrooms, movable tables and chairs are preferred, to allow for the most flexible use of space. In auditoriums, fixed tables with movable chairs are preferred to drop-arm seating, again to allow for flexible use and to maximize student work areas.

### **Movable seating**

- Student chairs may be tablet-arm chairs, side chairs (post legs or sled base, armless) or task chairs (5-point caster base, armless).
- Side chairs should stack for storage. Task chairs shall have minimal adjustments, preferably height adjustment only.
- Tablet-arm chairs shall have a minimum writing surface area of 144 square inches.
- Ten percent of tablet-arm chairs in a classroom shall be left-handed.

### **Fixed drop-arm seating**

- Fixed seating tablet arms shall have a minimum writing surface area of 130 square inches.
- Tablet arms shall be retractable and shall close with a single user motion.
- Ten percent of tablet arms shall be left-handed.

### **Instructor seating**

- There shall be seating available at the instructor station capable of adjusting from table-height to counter-height for use with a podium.

### **Instructor station**

- OCM has developed standard instructor stations with features designed to serve specific needs in different spaces. The instructor station to be used shall be discussed with OCM, and shall be one of the accepted OCM standard configurations.
- Larger classrooms with enhanced technology capabilities will utilize larger, more complex instructor stations. All aspects must be approved by OCM, in conjunction with CTS's technology requirements.
- Classrooms with demonstration areas shall have instructor stations with resilient top surfaces, to protect them from water, chemicals, and other liquids.

**Tables**

- Movable student tables shall provide a minimum of 26 linear inches of writing space per student and a minimum depth of 20 inches.
- In tablet-arm chair rooms, one or more 20 by 36 inch adjustable height tables will be provided to accommodate students with disabilities. In rooms with movable tables, specification preference will be given to tables that meet ADA requirements.
- Continuous fixed student tables shall provide a minimum of 26 linear inches of clear knee space per student and a minimum depth of 18 inches.
- Rows of tables will be spaced at a minimum of 30 inches apart, with 36 inches preferred.
- Power capability at student stations may be specified, depending on specific room requirements. Floor and electrical layouts should consider this need and future improvements.
- In addition to the standard instructor station, a table may be provided in the presentation area for the instructor. The dimensions of this table shall be proportional to the available space but no smaller than 30 by 48 inches.

**Presentation writing surfaces**

- Porcelain steel or glass dry-erase markerboards shall be installed across as much of the front wall as possible.
- Large classrooms may require layered, sliding markerboard panels to increase available writing surface.
- Additional markerboards may be required on secondary classroom surfaces; consult with OCM.
- Markerboards shall have accessory trays that run the full width of the board.
- Markerboard seams shall be flush.
- A cleaning supply dispenser system shall be mounted near one end of each markerboard.
- Refer to section 6 for lighting requirements of markerboards.

**Miscellaneous**

- All classrooms must be provided with a clock; the University utilizes the Primex GPS clock system. The clock shall be located off of the front (teaching) wall, and must be visible from every seat in the room. Large classrooms may require multiple clocks.
- Some classrooms may require wall-mounted tackboards, drains and chemical safety equipment, or other specialized items. Consult with OCM regarding such requirements.

## 11 - Informal learning spaces - Waypoints

**The Minnesota Facilities Model (MFM) establishes that at least 1 SF of study space per student seat should be provided in a classroom building. In other words, if there are 500 classroom seats (general purpose, departmental, or lab) in a building, at least 500 SF of study space should be provided.**

To provide students with study resources, OCM has developed the Waypoints initiative. Study spaces are marked with Waypoints signage (figure 10), and OCM's website has information on where to find these spaces and what amenities are available in each one. All new and renovated study spaces should accommodate this signage, which OCM will provide to the project.

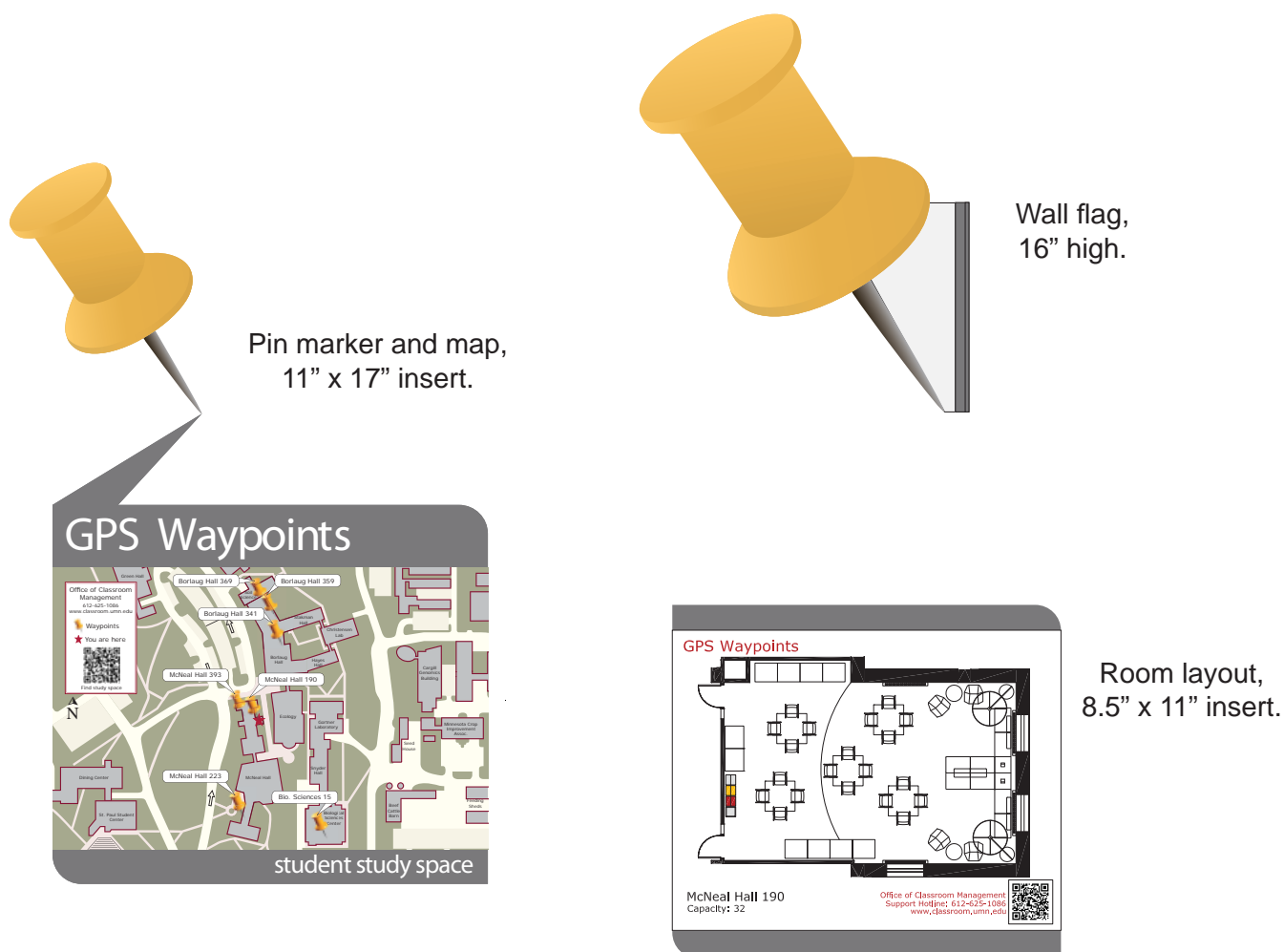


Figure 10, Standard Waypoint signage package.  
Shown for reference only; OCM will provide signs.

Unlike classrooms, Waypoints cannot be grouped into standard types, as each one must be addressed individually, based on the size, shape, and placement of the space. Some examples of existing Waypoints are provided in Section 11.1 of this document.

Waypoints should be located where they will be most used. Ideally, they should be located in buildings with clusters of classrooms, near food or vending locations, or in high-traffic zones. They should be attractive, easy to maintain, and make students feel welcome and valued.

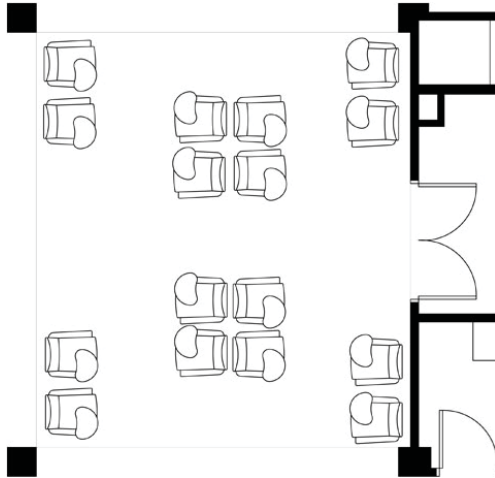
**Study spaces, especially large ones, should accommodate multiple study modes concurrently, and be flexible to the needs of students at a given moment. Different settings should be available for individuals and groups. Seclusion for focused study should be available, without sacrificing the need for security and student safety. Sightlines to all areas should be maintained via open space or glazing.**

Furnishings are expected to have a 5-8 year life cycle, with continuous heavy use. Fabric and carpet patterns and colors can be bolder and more varied than those used in classrooms, but should still hide stains and soil well and have durable surfaces, especially as food and beverages will be very common in these spaces. Power outlets should be abundant, as many students need to recharge mobile devices.

To support collaborative work, additional equipment may be required. These items could include markerboards (wall-mounted, mobile, or “smart” boards with recording capabilities), display monitors with laptop connections, flexible lighting, etc. The addition of these items should be considered on a case-by-case basis, as building infrastructure and space allow.

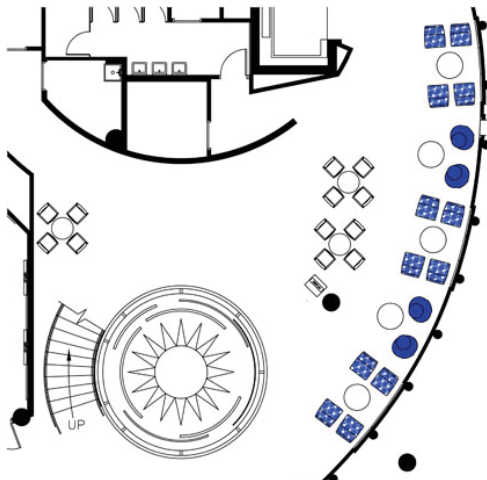
### 11.1 - Waypoints examples

Below are examples of existing Waypoints, demonstrating the range of spaces currently in use. Their condition and furnishings vary widely, and they are included here simply for reference.



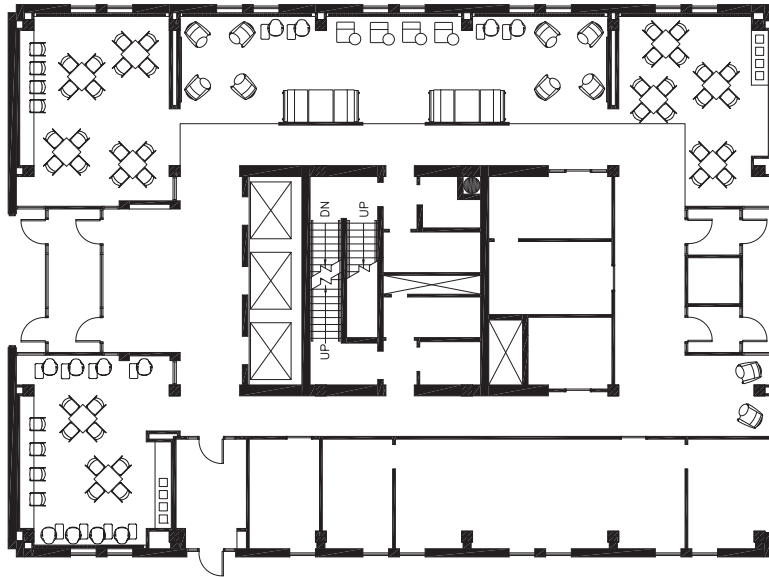
Nicholson Hall 1

- 16 capacity, 417 square feet
- 12 classrooms, 1 study space in building
- Tablet-arm mobile lounge chairs
- Open to corridor



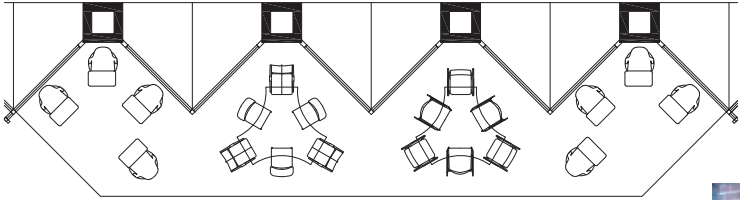
Science Teaching & Student Services 101A

- 28 capacity, 510 square feet
- 22 classrooms, 6 study spaces in building
- Lounge seating, cafe tables
- Open to corridor



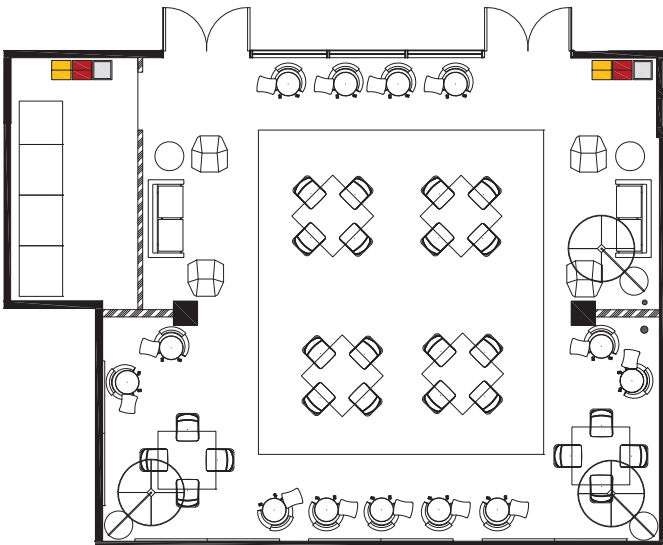
#### Social Sciences Building first floor

- 70 capacity, 1835 square feet
- 1 classroom, 1 study space in building (building adjacent to other classroom clusters)
- Lounge seating, cafe tables
- Four partially enclosed spaces



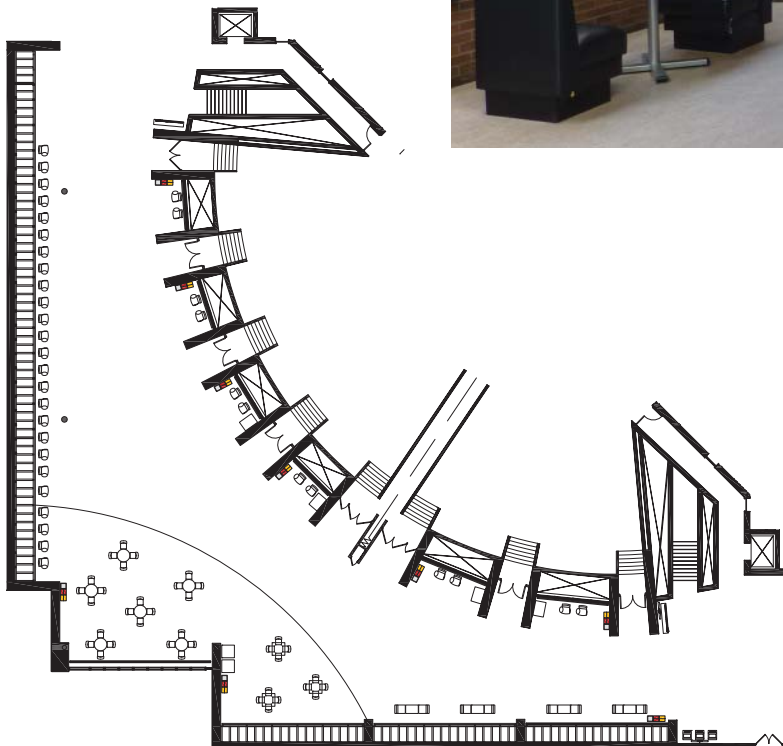
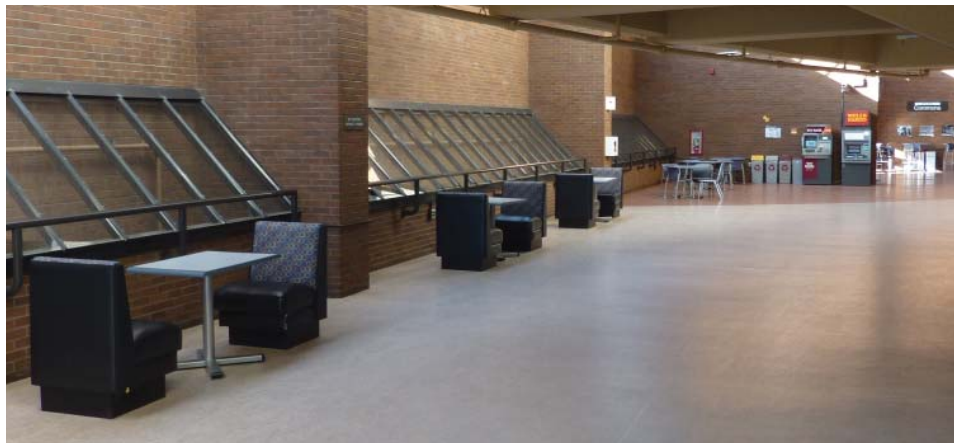
### Keller Hall 3-211

- 20 capacity, 284 square feet
- 6 classrooms, 2 study spaces in building
- Mobile tablet-arm chairs, tables and chairs
- Open to corridor



### Biological Sciences Center 15

- 45 capacity, 1392 square feet
- 2 classrooms, 1 study space in building
- Lounge seating, mobile tablet-arm chairs, cafe tables
- Fully enclosed



#### Willey Hall Atrium

- 89 capacity, 4883 square feet
- 2 large auditoriums, 1 study space in building (building adjacent to other classroom clusters)
- Lounge seating, cafe tables
- Open to corridor