

APPENDIX 3-CLASSROOMS (review by MB)

General Guidelines- All Classrooms

A. Normally, install chalkboard?????/markerboards on the front wall of the classroom. Review the specific requirements and placement with the Users. White markerboards are used in classrooms with computer installations.???? Above all chalkboards and markerboards, provide a cork tackstrip with spring clips and hooks.

B. Provide recessed, motorized projection screen or screens located in the front of the room. Screens to be matte white, wide format (3 x 5.3 ratio). Coordinate with electrical.

B. Generally, classrooms should have effective, easily operated and durable closures over the windows allowing the room to be completely darkened for projection. Blackout blinds are preferred.

C. Provide vision panels in or near classroom entry doors to allow students to determine if classroom is in use. Panels to be narrow to reduce spillage of light from corridors.

D. Provide adequate wheelchair locations in fixed seating rooms.

E. Normally the students desks/tables will be moveable furniture unless utilities are required.

F. Provide quiet and adequate mechanical systems.

G. Left-handed fixed seating writing tablets should be provided for about 10% of the seats. Exact location in consultation with Owner's Representative.

H. Generally, classrooms with a seating capacity in excess of 50 and scheduled for fixed seating should be designed for the use of sloped floor and/or risers toward rear of room.

I. "Smart Classrooms" shall be designated to include either a freestanding podium or a wall-mounted media podium at the front of the room connected to a network of computer cabling for a variety of Audio/Visual sources (VCR, DVD, CD, etc.). (See specific requirements below)

J. Lecture hall seats shall not be less than 20" in width with preference to 22". Folding tablet arms to have rattle-free mechanism.

K. Lighting general requirements to be reviewed with the specific user.

1. Student seating: 50 foot-candles recommended.

2. Instructor-presenter area: 100 foot-candles recommended.
 - 3 Chalkboard/ Markerboard: 70-90 foot-candles recommended.
 4. Aisle lights in Lecture Halls and as required by Code.
 5. Note-taking light level should be at 5 foot-candles-maximum without light spillage to projection screen.
 6. All light switches should have clearly labeled functions.
 7. Generally, Classrooms should have two lighting levels, one for general use and a lower (1/3) level for projector use: dual-level switched fluorescent lights are preferred. The row adjacent to the screen should be shut off with the lower level lighting.
 8. Provide separate lighting for the markerboard/black board. This lighting to be on a separate switch.
 9. Dimmable fluorescent lighting systems are generally NOT acceptable, without prior approval by the Owner's Representative. Enhanced dimmable fluorescent lighting circuit systems that address "flickering" will be considered.
 10. To avoid interference with a ceiling mounted projector, ceiling light fixtures should not extend below 9 feet above the floor.
 11. NOTE: Consideration for maintainability and efficiency should be incorporated into the lighting design. An excessive number of fixtures and/or types of fixtures/bulbs is not acceptable.
- L. Electrical requirements to be reviewed with the specific User.
- M. Provide conduit and junction box for wall mounted telephone near the media podium.
- N. Audio-Visual recommended requirements to be reviewed with the specific user.
1. Specific requirements for conduit sizes, cable trays, etc. will be developed for individual projects with the Owner's Representative and UCCS IT Department.

O. Media Utilization Design Guidelines and Criteria

1. All group instructional facilities need to be designed to accommodate the following visual and audio educational practices:

- a. Proper viewing angles (sight lines for all students) and size of projection surfaces.
- b. Effective lighting control and levels.
- c. Quality audio listening levels and acoustics. The design of the room should be conducive to intelligible un-assisted listening.
- d. Control of installed media equipment from the front media podium

P. Sustainability in design, energy usage and materials selection is a concern for UCCS. Some Projects may be designated for LEED certification: this will be identified by the Owner's Representative. Sustainability, within the budgetary constraints, shall be a consideration through the entire design and construction process.

Specific Requirements

A. Small Classrooms (16-30 seats)

1. Provide space for a wall-mounted podium at the front/side of the classroom. (See Appendix E) coordinate location of podium, conduits and junction boxes with UCCS Information Technology (IT) Department. Cut sheet? Number of conduits? Size? Podium to be provided by Owner?
- 2) Provide one junction box with an empty ½ inch empty conduit from the podium location to the center of the front wall for a microphone.
4. To allow for unobstructed viewing, when feasible, classroom screens should be 72 inches high vertically with the bottom at 42 inches above the floor.
5. Projection system without the ceiling mounted projector
6. Markerboard or blackboard shall be mounted adjacent to the podium installation.

B. Medium Classrooms (30-50 seats)

1. Provide space for a wall-mounted podium at the front/side of the classroom. (See Appendix E) coordinate location of podium, conduits and junction boxes with UCCS IT Department. Cut sheet? Number of conduits? Size? Podium to be provided by Owner????
- 2) Provide one junction box with an empty ½ inch empty conduit from the podium location to the center of the front wall for a microphone. ???
4. To allow for unobstructed viewing, when feasible, classroom screens should be 72 inches high vertically with the bottom at 42 inches above the floor.
6. Markerboard or blackboard shall be mounted adjacent to the podium installation.
7. Provide one duplex ceiling outlet for a video/data projector located 14 to 20 feet from the front of the room. Coordinate required monitor bracket support.

C. Lecture/Presentation Room (50 seats and larger)

1. Provide space for a freestanding media podium as described in Appendix E Podium to be provided by Owner. Coordinate podium location with UCCS IT department and furniture locations.
2. Provide one fully recessed outlet box (size???) with conduits from the podium location to:
 - a. the center of the front wall for a microphone. Size???
 - b. the rack location to the ceiling speakers. Size???
 - c. The public address system location. Size???
 - d. the motorized projection screen. Size???
 - e. the ceiling mounted projector. Size???
 - f. a Media Plate located at the rear of the classroom. Size???
3. Minimum workspace at front of room should allow 8 feet of distance between screen surface and transparency projector position. ?????
5. Halls may need to utilize a riser at room front or sloped seating to allow proper viewing for halls larger than 50 seating capacity.

6. To allow for unobstructed viewing, the screens should be a minimum of 72 inches high vertically with the bottom at 42 inches above the floor. When feasible, size the screen using the formula $H(\text{height}) = \text{MDV}(\text{distance to the most distant viewer}) / 6$.

7. Provide one duplex ceiling outlet for a video/data projector located 14 to 20 feet from the front of the room. Coordinate required monitor bracket support.

D. Auditoriums

1. Space (5' x 10' minimum) for an enclosed, secure projection booth should be provided at rear of auditorium. Provide space (10" x 20" min) to accommodate audio lighting and video controls. In primary performance spaces, the design criteria will vary and shall be reviewed in detail to determine the size and equipment needs.

Booth should contain:

- a. fixed glass projection window.
- b. all controls similar to those in front of auditorium
- c. power outlets above counter surface.
- d. two 1 1/2" conduits to front podium.
- e. two entrances (one to auditorium, one to foyer).
- f. network data jack
- g. intercom system connecting the booth with two locations backstage, two locations in front of house and additional location as required.

2. Minimum work space at front of auditorium should allow 10 feet of distance between screen surface and overhead projection position. Should utilize a second corner mounted 84" minimum screen for overhead projection.

3. Centered front projection screen should utilize electrical recessed ceiling models.

4. Largest dimension should be from front to rear of the classroom. Depth of room is critical to proper viewing angle for projection. Seating outside of a 30 degree angle on each side of the room's center line is poor viewing for front screen viewing of overhead or other projection equipment.

5. Auditoriums may need to utilize a riser at room front or loped seating to allow proper viewing.

6. Auditorium ceiling height should allow viewing of a vertical 96" image without bstruction from all seating positions.

7. Provide for a ceiling mounted video projector mount to be:

- a. approximate 15 feet from front, centered screen.
- b. minimum of a 2" conduit from projector position to front podium location.
- c. 110V AC power outlet at ceiling mount location.

8. Provide space for a media podium at front/side of room. (see Appendix E for size)

9. Provide one fully recessed outlet box (size???) with conduits from the podium location to:

- a. the center of the front wall for a microphone????
- b. the rack location to the ceiling speakers
- c. the public address system location
- d. the motorized projection screen
- e. the ceiling mounted projector
- f. equipment controls should be duplicated in the control booth to enhance flexibility of the space.

10. Potential use of auditorium for remote video conference reception and origination should be reviewed with potential users, and Information Technology Department. If usage is probable, the planning should include:

- a. conduit for remote camera locations.
- b. extra space and a switching console in projection booth.
- c. interconnects (conduit and cable runs) to building broad band and fiber band and fiber optics panel.
- d. extra conduit (2-3/4") from projection booth to front control panel.