

APPENDIX O

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CLASSROOM DESIGN GUIDELINES

The Ohio State University

PART I: ROOM GEOMETRICS	SEMINAR ROOMS (20 or less)	GENERAL PURPOSE CLASSROOMS (21-80)	LECTURE HALLS (81 or more)
A. ASPECT RATIO (Length to Width)	ideally length (dimension perpendicular to teaching center) shall be equal to width and shall not exceed 1.5 width	ideal aspect ratio length to width is 1.5:1	not applicable due to varying room shape -- effective sight lines for viewing entire teaching area and projected images are critical adherence to guidelines is mandatory (see PART III-D)
B. CEILING HEIGHT	8' minimum	10' minimum in Rooms to 49 capacity; 12' minimum in Rooms 50-74 capacity; 14' minimum in Rooms 75-80 capacity	10' minimum at rear wall; front wall viewing area height to be minimum of [(room length / 6 + 4)feet] while maintaining clear sight lines from each seat
C. TEACHING AREA DEPTH (Least Distance) (perpendicular measure from center of teaching wall to nearest student seat)	minimum 6' if an identifiable teaching station is provided by furniture arrangement	minimum 10', 12' preferred	depth of teaching area dependent on stage dimensions and location of any fixed equipment such as demonstration bench or electronic lectern; general minimum 15 feet
D. SIGHT LINES FROM EACH STUDENT SEAT TO CENTER OF TEACHING SURFACES	Vertical: not > 20° from horizontal sight line of seated person Horizontal: not > 45° from perpendicular line to each teaching surface from student seat	Vertical: ±15° from horizontal sight line of seated person Horizontal: not > 45° from perpendicular line to each teaching surface from student seat	Vertical: ±15° from horizontal sight line of seated person Horizontal: not > 30° from perpendicular line to each teaching surface from student seat
E. FLOOR ELEVATION CHANGES	not permitted	rooms with >70 capacity may provide tiered seating to improve sight lines from rear access as needed	same as Seminar Rooms
F. CEILING ELEVATION CHANGES CEILING ANGLES WITH TEACHING WALL	not permitted	normally flat--in rooms >70 capacity ceiling above teaching center may be angled to better reflect sound to rear of room	ceilings must be angled properly to provide for sound reflection from teaching center to rear portions of room

G. SIDEWALL ANGLES WITH TEACHING WALL	normally perpendicular but may be angled for architectural reasons	normally perpendicular but may be angled for architectural reasons in smaller rooms (<50 capacity)	sidewalls must not be parallel -- angle(s) with teaching all shall be determined from study of acoustics in each room depending on size and shape
H. TEACHING AREA ELEVATION	required to be same as seating area if a separate teaching area is demarked by furniture arrangement	ADA accessible platform required to be same as seating area except in rooms of > 70 capacity where an ADA accessible platform not to exceed 7 inches in height may be provided for the teaching center.	must be at same elevation as entry corridors to "front" of lecture hall and adjacent classroom service rooms provide ADA accessible to & from "stage" front and rear area

PART II: SONIC CONDITIONS & CONTROLS	SEMINAR ROOMS	GENERAL PURPOSE CLASSROOMS	LECTURE HALLS
A. ROOM SOUND QUALITY	<p>all rooms must feature a sonic environment which provides for good aural conditions at every student seat with particular attention to:</p> <ol style="list-style-type: none"> 1) preventing unwanted sounds outside the room from entering through walls, floor, mechanical ducts or other openings into the room 2) preventing interfering sound reverberations within the room 3) providing for clear transmission of sounds from the teaching area to all student seats. 	<p>same as Seminar Rooms</p>	<p>same as Seminar Rooms</p>
B. SOUND CONTROLS	<p>room enclosures shall have a sound transmission coefficient of at least 50 -- sound levels in empty room shall have ambient noise not greater than 35 db measured at average head height (44") for a seated person -- all walls must extend to structure -- doors shall not have louvers</p>	<p>same as Seminar Rooms</p>	<p>side walls shall be neither parallel nor of continuous hard surface expanse and have a sound transmission coefficient not less than 50 -- teaching wall must be of hard surface materials -- rear wall and side walls shall have sound dampening material applied to "tune" the room so that sound is adequately reflected without interfering reverberations -- ceilings shall be sloped or stepped and be a hard surface to directionally reflect sound -- any acoustical material on ceilings shall be applied carefully and usually only near side walls and rear wall -- designers are strongly encouraged to use services of an acoustician in Lecture Hall design</p>
C. SOUND CONTROLS: INTERIORS	<p>teaching wall must be hard surface -- side and rear walls may have sound dampening material applied as needed -- ceiling shall provide a sound reflectant surface sufficient to carry sound from teaching center to all student seats but otherwise may use sound reduction material with a noise reduction coefficient of 0.6</p>	<p>same as Seminar Rooms except that rooms of >70 capacity may provide a sound amplification system for both live and recorded presentation and shall have acoustical shaping to insure good sound projection to rear seats</p>	<p>side walls shall be neither parallel nor of continuous hard surface expanse and have a sound transmission coefficient not less than 50 -- teaching wall must be of hard surface materials -- rear wall and side walls shall have sound dampening material applied to "tune" the room so that sound is adequately reflected without interfering reverberations -- ceilings shall be sloped or stepped and be a hard surface to directionally reflect sound -- any acoustical material on ceilings shall be applied carefully and usually only near side walls and rear wall -- designers are strongly encouraged to use services of an acoustician in Lecture Hall design</p>

<p>D. SOUND AMPLIFICATION</p>	<p>optional</p>	<p>optional in rooms up to 70 capacity -- rooms >70 capacity may require an in-room voice amplification system with microphone and volume control accessible to the instructor -- audio line input with local control -- also amplification system must be able to accommodate an FM wireless system to serve 5% of student seats for hearing-impaired students -- designers must consult with staff from the OSU Office of Information Technology Classroom Facilities and Systems Design regarding need for a sound system in rooms > 70 capacity</p>	<p>sound amplification system required to serve both live and recorded aural presentation -- a "hands-free" microphone is required, a wireless microphone is desirable -- system shall be capable of amplifying sound tracks of recorded material and an incoming telephone line -- sound shall be carried to 5% of seat stations to serve hearing-impaired students -- sound system levels to be controllable both from teaching area and from projection booth</p>
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PART III: VISUAL CONDITIONS AND CONTROLS	SEMINAR ROOMS	GENERAL PURPOSE CLASSROOMS	LECTURE HALLS
A. LIGHT QUALITY AND INTENSITY	<p>light levels must be uniform throughout the task area</p> <p>-- audience light levels shall be 40-50 foot candles for non-mediated instruction, audience light levels shall be 2-10 foot-candles for mediated and note taking instruction, chalkboard illumination shall be 60-70 foot-candles</p> <p>-- audience level measurements to be taken at desktop height</p>	<p>same as Seminar Rooms</p>	<p>same as Seminar Rooms with the inclusion of appropriate aisle/entrance lighting be uniform throughout task area -- all fixtures flush with the ceiling. Use parabolic fixtures, diffusers or other appropriate means to eliminating glare -- wall sconces may be appropriate in some instances</p>
B. ARTIFICIAL LIGHT CONTROL	<p>lighting controls shall be standardized in layout and location as much as possible -- all controls must be labeled clearly and adhere to all applicable ADA requirements and building regulations -- an entry lighting control shall be located at each room entrance, full room lighting controls shall be located on the wall with easy access from the teaching station -- indirect, dimmable fluorescent lighting shall be used to eliminate glare -- minimum lighting controls to have one zone for teaching area, one zone for audience, and on/off chalkboard light control -- in general, fluorescent light fixtures are to be flush with ceiling and run parallel with the teaching wall -- exact fixture orientation will depend on seating arrangement -- chalkboard lighting fixture type and placement to avoid interference with projection screen operation</p>	<p>same as Seminar Rooms except direct, dimmable fluorescent fixtures shall be used to achieve proper lighting levels in audience area</p>	<p>same as General Purpose Classrooms with these additions: dimmable incandescent fixtures may be substituted for fluorescent fixtures in teaching area -- optional lectern spots with separate controls may be used, placement and design of these fixtures must eliminate any chance of shadowing or bleeding onto the projection screen -- control panels shall be located near the instructors station on the wall offering easiest access -- a second full control panel must be provided in the projection booth or projection control area -- consideration for the ease of lamp replacement must be taken when choosing fixtures --</p> <p>*NOTE* rooms supporting specialized activities i.e. computer labs, distance learning or video conferencing need specialized considerations -- lighting specifications for such rooms shall be engineered individually</p>
C. NATURAL LIGHT CONTROL	<p>all fenestration openings must be equipped with light control devices which will eliminate natural light on the projection screen and permit room darkening to 5 foot candles at student stations even if direct sunlight is a factor (NOTE: this includes interior door glass) -- since frequent room darkening is required in classrooms, window area shall be minimized</p>	<p>same as Seminar Rooms</p>	<p>windows not recommended in Lecture Halls, otherwise, same as Seminar Rooms</p> <p>provide room darkening if needed in entry door vision panels</p>

D. PROJECTED IMAGES -- ANGLES AND DISTANCES	sight lines from average person's seated eye level (44") to center of projection screen(s) shall not exceed 45° from perpendicular in the horizontal plane -- student seats shall be no closer than 1.5 times a single image width nor farther than 6 times a single image height -- lowest part of projected image to be 36" - 48" AFF -- top of projection screen shall subtend an angle not > 35° from the horizontal sight line of average seated person	same as Seminar Rooms	same as General Purpose Classrooms except that student sight line angle shall be reduced to a maximum of 30 degrees from perpendicular in the horizontal plane lowest part of projected image based on stage characteristics
E. SURFACE REFLECTANCES	reflectance values of surface finishes shall be within the following ranges: <ul style="list-style-type: none"> • Ceilings 60-90% • Walls 40-60% • Floors 20-50% • Table or tablet-arm tops 30-50% • Chalkboards 20-30% 	same as Seminar Rooms	same as Seminar Rooms except for ceilings (see Part IX-B)

PART IV: THERMAL CONDITIONS AND CONTROLS	SEMINAR ROOMS	GENERAL PURPOSE CLASSROOMS	LECTURE HALLS
A. IN-ROOM HVAC CONTROLS	room HVAC controls shall be part of a building zone or whole building control system with tamper proof thermostats -- in-room systems or window units not permitted due to noise generation	same as Seminar Rooms	due to room volume and occupation of multiple building levels, in-room HVAC controls may be used -- install tamper-proof thermostats
B. HVAC SYSTEMS	air conditioning required -- shall be part of a building central system or at minimum a building area system -- in-room HVAC systems or window units not permitted due to noise generation -- air flow (supply/return) in room shall not move the projection screen	same as Seminar Rooms	same as Seminar Rooms consider separate air handlers for one or groups of similar rooms
C. TEMPERATURE AND HUMIDITY TOLERANCES	Temperature and humidity should be maintained to meet the health and comfort requirements of the occupants	same as Seminar Rooms	same as Seminar Rooms

PART V: TEACHING SURFACES	SEMINAR ROOMS	GENERAL PURPOSE CLASSROOMS	LECTURE HALLS
A. VERTICAL WRITING SURFACES	<p>teaching wall must have black chalkboard (slate or steel with steel preferred) or optional whiteboard (chalkboard preferred) at 4' vertical height mounted 3' above finished floor -- tack strip and chart rail with movable mounting hooks required above writing surface, chalk tray required below entire length of the board -- writing surface on corridor sidewall optional -- to accommodate writing surface the teaching wall shall have no projections such as pilasters, columns, chases, etc.</p> <p>chalkboards must be properly illuminated (see Part III-A,B)</p>	<p>same as Seminar Rooms except that whiteboards are not permitted</p>	<p>chalkboards optional -- size of auditorium and intended use would dictate that chalkboard specifications for each room shall be engineered individually -- black chalkboards to be centered on the teaching wall only -- consider multi-level sliding and power operated chalkboards -- tack strip and display hooks not required</p> <p>installed chalkboards must be properly illuminated (see Part III-A,B)</p>
B. VERTICAL DISPLAY SURFACES	<p>provide one 3'x 4' tack board in room adjacent to entrance -- provide one 3'x 4' tack board in corridor for each group of two to five rooms (one or isolated single rooms do not require a corridor tack board)</p>	<p>same as Seminar Rooms</p>	<p>provide one 3'x 4' tack board inside and outside of each principal student entrance to room, or if a lobby area is adjacent to the principal entries, locate one 3'x 4' tack board in a prominent place</p>
C. PROJECTION SCREENS	<p>provide one 70" x 70", matte white manually operated projection screen in each room -- each screen shall be hung on brackets extending at least 6" from the wall or enough to clear all obstructions -- bracket attachment to the wall must support the weight of the screen and any dynamic loads applied during screen operation -- on hollow walls, brackets shall be fastened to a surface-mounted continuous 1x wood board with blocking behind (paint or stain) -- screens shall be hung 6 ft. above the chalk rail -- when there is not 6 ft. available the screen shall be hung as high as possible -- the center of the extended screen shall meet the viewing angles described in PART I-D and PART III-D</p>	<p>same as Seminar Rooms with following addition -- front wall installation of two 70" x 70" screens to allow simultaneous use of a screen and chalkboard</p>	<p>screen size, type and placement to be determined by consultation with the Office of Information Technology Classroom Facilities and Systems Design -- when an electric screen is utilized the controls shall be placed adjacent to the lighting controls in the teaching area and projection booth</p> <p>adhere to viewing angles described in Part III-D</p>
D. TEACHER TABLE (movable)	<p>optional</p>	<p>2' x 4' movable table minimum</p>	<p>Optional, same as General Purpose Classroom when desired</p>

PART VI: MOVABLE EQUIPMENT	SEMINAR ROOMS	GENERAL PURPOSE CLASSROOMS	LECTURE HALLS
A. AUDIO-VISUAL EQUIPMENT	Minimum requirements of every room shall be a wall mounted projection screen and an overhead projector on a cart -- each room shall permit the use of all current educational technologies -- all projects shall be coordinated with the Office of Information Technology Classroom Facilities and Systems Design	same as Seminar Rooms with addition of a second wall mounted projection screen	A full complement of audio/visual equipment shall be provided by each building project -- Minimum requirements shall be dual 35mm projection with remote control, dual overhead projectors on carts, 16mm projection, and full sound reinforcement -- all projects shall be coordinated with the Office of Information Technology Classroom Facilities and Systems Design
B. TEACHING STATION MOVABLE EQUIPMENT	Optional table-top lectern and teacher table	Table top lectern and teacher table -- optional free-standing podium	rooms may have a free-standing podium, provisions must be made to meet ADA regulations--layout of each podium to be determined by the Office of Information Technology Classroom Facilities and Systems Design
C. STORAGE UNITS	optional (see PART XIII-A)	same as Seminar Rooms except in rooms where video/data projectors are installed -- space may be required to house support equipment for video/data projection (see PART XIII-A)	all storage to be within service room (see PART XIII-A)

PART VII: FIXED EQUIPMENT	SEMINAR ROOMS	GENERAL PURPOSE CLASSROOMS	LECTURE HALLS
A. TV MONITORS	not recommended	not recommended	not recommended
B. SOUND REPRODUCTION AND REINFORCEMENT	optional	Optional -- rooms with > 70 capacity may require a sound system depending on room geometry and acoustical features- (see PART II-D)	in-room system required -- project designers must consult with the Office of Information Technology Classroom Facilities and Systems Design (see PART II-D)
C. AUDIO-VISUAL EQUIPMENT CONTROLS	controlled at the device -- consult with the Office of Information Technology Classroom Facilities and Systems Design	controlled at the device -- consult with the Office of Information Technology Classroom Facilities and Systems Design	all machines controllable both from teaching area and projection booth -- consult with the Office of Information Technology Classroom Facilities and Systems Design
D. VIDEO/DATA PROJECTION	achievable with portable projection equipment and in-room mounted projection screen	fixed video/data projection and related equipment to be considered in some rooms -- to be coordinated with the Office of Information Technology Classroom Facilities and Systems Design	provide ceiling-mounted (or equivalent) projector to handle both video and data projection, including high resolution graphics and composite video images--audio from the video projection system is to be amplified by the room sound system—all projection systems, control panels, and related equipment to be coordinated with the Office of Information Technology Classroom Facilities and Systems Design
E. CLOCK	rear of room	rear of room	rear of room
F. CLASS BELL	locate in corridor	locate in corridor	locate in corridor
G. DEMONSTRATION BENCH (fixed)	optional	optional	optional in rooms where natural sciences are taught -- where specified, provide an instructor's fixed demonstration bench, minimum 8'x 4' deep, with acid resistant top and 120v power outlets

PART VIII: FURNITURE	SEMINAR ROOMS	GENERAL PURPOSE CLASSROOMS	LECTURE HALLS
A. STUDENT SEATS	student seats shall be selected to provide comfort for all size students -- provide sturdy armless chairs for classroom capacity -- chairs shall be designed so that rear legs project further than top of seat back	two options: 1) sturdy tablet arm chairs with usable writing surface >180 sq. in. with a minimum 12 in. in one dimension, or 2) tables and chairs. If tablet-arm chairs are used, 10% of all chair stations shall have color differentiated left-hand tablet arms unless the writing surface is >200 sq. in -- tables shall be minimum 18 inches deep and afford at least 30 inch width work space per student station -- aisle width per code and ADA regulation	two options: 1) fixed theater type seat with fold-up tablet arm having usable writing surface > 180 sq. in. with a minimum 12 in. in one dimension, or 2) loose armless chairs with strip tables -- provide stations for wheelchair at 5% of room capacity -- 10% of all tablet-arm stations shall be left-hand unless the writing surface is >200 sq. in. -- fixed seating shall be back- mounted to risers if possible
B. STUDENT TABLES	provide tables with at least 18 inch depth and 30 inch width work space per seat to afford minimum 3.75 sq. ft. of table space per student station	Same as seminar room	Same as seminar room
C. SEATING FOR PEOPLE WITH DISABILITIES	leave clear space in front -- do not block aisles -- location and number of seats per ADA guidelines	leave clear space in front -- do not block aisles -- location and number of seats per ADA guidelines	leave clear space in front -- do not block aisles -- location and number of seats per ADA guidelines
D. TEACHING STATION	If teacher workspace is not included in room furnishings, provide instructors desk or table at least 24 inches deep by 48 inches long and one armless chair (In addition, see Part VI-B)	provide instructors desk or table at least 24 inches deep by 48 inches long and one armless chair (In addition, see Part VI-B)	Same as General Purpose Classroom (In addition, see Part VI-B)
E. WRITING SURFACE AT STUDENT SEATS	very durable, hard finish plastic laminate or equivalent required whether table top or tablet arm	same as Seminar Rooms	same as Seminar Rooms
F. WASTE AND RECYCLING RECEPTACLES	one located near room entrance(s)	same as Seminar Rooms	one located near room entrance(s) and at instructor's station

PART IX: ROOM SURFACES	SEMINAR ROOMS	GENERAL PURPOSE CLASSROOMS	LECTURE HALLS
A. FLOOR FINISHES	vinyl tile or rubber tile--(sheet vinyl not permitted) -- carpet may be considered	Same as Seminar Room	resilient tile required in seating areas, carpet in main aisles for sound control
B. CEILING FINISHES	light color materials preferred --acoustical drop surface preferred -- painted plaster or gypsum board acceptable -- unfinished structure not usually acceptable	same as Seminar Rooms except in rooms > 50 capacity--acoustical properties must be carefully planned to insure sound reflectance to rear of room and control of reverberations	shall be light colored non-reflective materials -- acoustical properties shall be the over-riding factor in selection and application of ceiling finish materials
C. TEACHING WALL FINISHES	if a teaching area is established, sound and light reflectance are the most critical factors -- wall finishes or coverings below chalkboards must be of easily cleanable material -- teaching walls shall be free of projections such as pilasters, columns, chases, etc., front teaching wall shall not contain windows	same as Seminar Rooms	same as Seminar Rooms
D. OTHER WALL FINISHES	gypsum board or concrete block, painted or textured are preferred -- light colors preferred -- in rooms with movable table and chair furniture, chair rails shall be considered	same as Seminar Rooms--sound reflectance is more critical in rooms with > 50 capacity (see Part II-C)	same as Seminar except that acoustical properties become more critical, especially rear wall and rear portions of side walls (see Part II-C)

PART X: ELECTRICAL SERVICES	SEMINAR ROOMS	GENERAL PURPOSE CLASSROOMS	LECTURE HALLS
A. ELECTRICAL SERVICE	each classroom shall have multiple circuits on breakers not shared with other spaces -- one grounded quadplex 120V receptacle on center of teaching wall -- grounded duplex receptacles spaced around room with at least one on each wall with at least 12 feet apart, all at 18" mounting height refer to OSU wiring standards	each classroom shall have multiple circuits on breakers not shared with other spaces -- one grounded quadplex 120V receptacle on center of teaching wall -- grounded duplex receptacles spaced around room with at least one on each wall and outlets not > 12 feet apart, all at 18" mounting height refer to OSU wiring standards	Electrical service to be coordinated with the Office of Information Technology Classroom Facilities and Systems Design -- Specialized electrical service must be accounted for in A/V systems and Projection Booth Design
B. COMMUNICATION AND DATA TRANSMISSION	refer to OSU wiring standards	refer to OSU wiring standards	refer to OSU wiring standards

PART XI: ROOM ACCESS AND CIRCULATION	SEMINAR ROOMS	GENERAL PURPOSE CLASSROOMS	LECTURE HALLS
A. ROOM LOCATION IN BUILDING	location away from other high student access rooms is encouraged (e.g. libraries, computer labs, departmental offices) shall not be located adjacent to, above, or below toilet rooms, mechanical rooms or elevator shafts	Same as Seminar Rooms -- shall not be located more than three levels above grade -- rooms > 50 capacity shall be located on lower floors -- access from secondary building corridors is discouraged -- clustering classrooms for ease of support services is strongly encouraged	grade or ground floor access is required with preference for exterior ingress to a lobby area outside the Lecture Hall -- convenient access to a building loading dock is preferred
B. ROOM INTERNAL CIRCULATION	unobstructed access to all student seats with a minimum 36" passageway is required	same as Seminar Rooms plus rooms with capacities up to 50 require at least one distribution aisle perpendicular to the teaching wall with two cross aisles row or two distribution aisles with one cross aisle -- rooms > 50 capacity require at least two distribution aisles and two cross aisles directed at doorways -- for fixed seating, aisles between rows must allow minimum 12 inches between rear of seat and raised writing tablet or other furthest protrusion	unobstructed access to all student stations with adequate passage aisles to meet all ADA and Building codes -- multiple distribution aisles
C. DOORS	one access door with a clear glass view panel of 2-1/2" x 17-1/2" required -- door located at rear (opposite end of room from teaching wall) -- all other door characteristics per ADA and Building guidelines	same as Seminar Rooms -- rooms > 49 capacity require two access doors, one at rear and another near center of corridor wall	exit openings as required to meet ADA and Building codes for room capacity -- student access shall be at rear of room for normal ingress/egress pattern -- view panel of 2-1/2" x 17-1/2" required in all exit doors
E. ASSOCIATED ROOMS AND SPACES	classrooms in buildings create demands for nearby waiting space, public-use telephone, and toilet rooms -- however, vending areas shall not be located near classrooms -- waiting spaces shall be design to reduce need for students to sit on floor which interferes with emergency egress	same as Seminar Rooms	same as Seminar Rooms
F. ROOM IDENTIFICATION	provide room number per University signage system	same as Seminar Rooms	same as Seminar Rooms

PART XII: SPACE ALLOCATIONS	SEMINAR ROOMS	GENERAL PURPOSE CLASSROOMS	LECTURE HALLS
A. TEACHING AREA SPACE	Optional due to unusual furniture arrangement -- if a teaching area is defined the minimum depth shall be 6 feet	size of teaching area will vary with room dimensions -- teaching area equals: (depth as specified in Part I-C) x (room width)	depth of teaching area dependent on stage dimensions and location of any fixed equipment such as demonstration bench or electronic lectern; general minimum = (15 feet) x (stage width)
B. AREA PER STUDENT STATION	total room area shall approximate 25 sq. ft. per student station	Seating area = (total room space) - (teaching area) Area per student station = (seating area) / 13 for movable tab-arm chairs, and (seating area) / 17 for movable tables and chairs	Seating area per student station will vary with seating type and arrangement -- typical range from 9-13 sq .ft. per station for fixed tab-arm chairs, 14-17 sq. ft. per station for fixed tables and moveable chairs -- adhere to all ADA and Building design standards for number and width of aisles

PART XIII: CLASSROOM SERVICE ROOMS	SEMINAR ROOMS	GENERAL PURPOSE CLASSROOMS	LECTURE HALLS
A. AUDIO/VISUAL AND COMPUTER EQUIPMENT STORAGE ROOM	provide one 10' x 10' lockable closet with hallway access for up to 10 classrooms in a building -- in buildings with more than 10 classrooms provide one additional storage closet for each additional lot or fraction of 10 classrooms	same as Seminar Rooms -- additional storage may be required within classrooms equipped with video/data projection -- coordinate with the Office of Information Technology Classroom Facilities and Systems Design	separate lockable room, accessible from front of classroom and located adjacent to teaching area -- minimum room size to be 8' x 10' to house carted and installed computers, A/V and video equipment -- room to have two 120 VAC quad outlet boxes and approximately 30 foot candles of illumination -- room is to be heated and air conditioned as per building system
B. PROJECTION BOOTH	optional	optional	projection booth required in all Lecture Halls -- minimum requirements are HVAC ventilation, dimmable lighting and control, 2'Hx 8'W projection window, and a window width countertop with upper surface level with bottom of window -- dedicated circuit with quad electrical receptacle under countertop, two dedicated 20A circuits for audio rack equipment -- exact layout and design to be determined by project through the Office of Information Technology Classroom Facilities and Systems Design
C. PREPARATION ROOM	optional	Optional -- Per special departmental requests and not as a general requirement	Optional -- Per special departmental requests and not as a general requirement