ELI

Learning Space Rating System

Version 2

February 2017

Development Team and Authors
Malcolm Brown, EDUCAUSE Learning Initiative
Joseph Cevetello, City of Santa Monica
Shirley Dugdale, Dugdale Strategy
Adam Finkelstein, McGill University
Richard Holeton, Stanford University
Phillip Long, University of Texas at Austin
Carole Meyers, Dartmouth College

EDUCAUSE LEARNING INITIATIVE

EDUCAUSE

Acknowledgments

The development team gratefully acknowledges the invaluable contributions to the Learning Space Rating System (LSRS) by our colleagues:

Robert Beichner, North Carolina State University
Elliot Felix, BrightSpot Consulting
Linda Jorn, University of Wisconsin
Andrew Milne, Tidebreak

Contents

Introduction to Version 2

The Learning Space Rating System (LSRS) provides a framework to measure the potential performance of a learning space, that is, to assess what the space enables learners and instructors to do in it. It serves as a way to measure progress toward designing learning spaces that support active learning and engagement. It also provides the higher education community with a common language and method to document best practices.

This version of the LSRS reflects recommendations from members of the academic community who worked with version 1 over the course of more than a year of testing, discussion, and reflection on their campuses.

Higher education is under increasing scrutiny as costs continue to increase and as more learners consider alternatives to traditional residential education. In addition, new course models (using blended and flipped pedagogies) provide opportunities to rethink the design of learning spaces. Given this environment, it is important to focus attention on the value of campuses and in particular those physical spaces where instructor-facilitated learning occurs and to engage key campus stakeholders, instructors, and learners in their planning and design.

The LSRS measures formal learning spaces—those designed to accommodate face-to-face scheduled meetings of all participants. It provides a set of credits that assess not only the design of individual rooms but also the planning, support, evaluation, and strategic alignment that are crucial to the success of the learning that occurs in a learning space. Recognizing that there is great diversity in teaching and learning, the LSRS does not seek to prescribe specific teaching and learning practices but rather to evaluate a room's ability to support a broad range of those practices.

Planning, design, and support of learning spaces is a collaborative and communal undertaking between instructors, learners, administrators, technologists, facilities personnel, and planners. Only by working across the institution can we sustain a campus environment that treats learning spaces holistically and provides an ecosystem to sustain and promote productive instructor and student interactions.

Since approaching learning spaces at the institutional level requires coordination across multiple groups, we have divided the instrument into two sections. Part A comprises sections 1, 2, and 3 of the learning space assessment tool and measures institutional readiness and development of a planning and operations process. Part B comprises sections 4, 5, and 6 and addresses specific features of individual physical spaces.

Changes with Version 2

Documentation of Evidence for Meeting Criteria

A new element of the LSRS v2 is the opportunity to assemble the documentation supporting the judgments made in the use of the rating scale as a record of planning, with the intent to support learning spaces. We hope the process will be transparent and invite institution-wide input as well as awareness. Future versions of the LSRS may encourage submission to a third-party review panel for independent confirmation of the rating proposed and recognition of the scores received.

Each credit of the rating system now has an **Evidence for this credit** section that gives concrete suggestions as to the kind of documentation or artifacts that may be used to demonstrate the particular item that has been addressed. Other artifacts may well be considered better representations of how a criterion was met, and campuses are encouraged to select those they think best document the rating they have assigned it. The evidence could include rich media artifacts (video clips, drawings, etc.) if these truly provide more concise and effective confirmation of the achievement of design criteria.

We strongly recommend that teams put together the documentation at the time the instrument is used on campus. This is valuable for the institution and its planning and support of active learning spaces. If there is an interest in receiving an external validation and rating in the future, this documentation can serve that purpose.

Addition of Separate Subscores for Part A and Part B

Users of the LSRS indicated that it may be helpful to be able to score part A (sections 1–3) and B (sections 4–6) separately. The premise of the LSRS is that institutional context, culture, and support service operation are important aspects to the fostering of active learning spaces and that scores from those sections become part of the overall score for a space. However, a separate line for a subscore for each section has been added to the scoresheet.

Removal of Space Types from Point System

Version 1 used four categories of formal learning space for achieving points under certain criteria (i.e., discussion-focused spaces, team-based learning spaces, presentation focused spaces, and versatile spaces). As the intent of LSRS is to be a tool for rating spaces on how well they can support the potential for active learning pedagogical practices, in version 2 we have removed these categories from those criteria. Rating against all the criteria will automatically allow active learning spaces to accrue scores with higher points.

New and Eliminated Credits

In version 2, we introduce a credit for accessibility and universal design (credit 4.8) and a credit for environmental and cultural inclusiveness (credit 4.7). We eliminated the innovation credit that appeared at the end of each section in version 1. We felt that the innovation credit was too vague, as what constitutes an innovation is highly relative across institutions.

Part A: Campus Context, Planning, and Support Considerations

Section 1: Integration with Campus Context (ICC)
Section 2: Planning and Design Process (PDP)
Section 3: Support and Operations (SO)

Section 1: Integration with Campus Context (ICC)

Credits included in this section:

       1.1   Alignment with Campus Academic Strategy
       1.2   Learning Space Master Plan
       1.3   Compatibility with Technology Strategic Plan
       1.4   Commitment to Evidence-Based Research and Assessment
       1.5   Campus Leadership for Learning Spaces

Total points available in this section: 5

Weighted percentage of total points available: 10%

ICC Credit 1.1: Alignment with Campus Academic Strategy

Intent
To align learning spaces with strategic academic plans or initiatives, including institutional accreditation and accountability activities.

1 point

Criterion for the point
Provide evidence of alignment of learning space planning with campus strategic academic plans, major campus academic initiatives, and/or institutional accreditation processes.

Evidence for this credit
Provide documentation that demonstrates alignment between the learning space's design and established, written institutional academic strategies.

Additional considerations
- Map learning space planning or design directly to campus academic goals. For example, a team-based space design could be aligned to the goal of increasing student engagement and collaboration skills.
- Weave the learning space design directly into a major campus initiative. An example might be including mobile projection in the space's design to align with a campus tablet initiative.
- Substantiate the above by describing specific learning space references in publications or academic, school, or department strategic plans and showing how the learning space's design addresses those ambitions.

ICC Credit 1.2: Learning Space Master Plan

Intent
To ensure that learning spaces are designed in accordance with institutional strategic directions for its learning spaces.

1 point

Criterion for the point
Provide evidence of close alignment of the room's design with an existing campus learning space master plan.

Evidence for this credit
Document the ways in which the learning space's design conforms to the guidelines of the campus learning space master plan.

ICC Credit 1.3: Compatibility with IT Infrastructure and Plans

Intent
To ensure that the planning, development, and operation of learning spaces is supported by the institution's technology infrastructure.

1 point

Criterion for the point
Demonstrate specific ways in which institutional technology infrastructure and strategic plans support learning spaces.

Evidence for this credit
- Provide documentation on how the institution's IT plans support learning space development and operation.
- Provide evidence that the refresh cycles of network and other technology infrastructure align with learning space needs.

Additional considerations
- Involve academic technology and information technology professionals as part of planning teams, as described in Section 2: Planning and Design Process (PDP).
- Ensure that technology budgets provide for upgrades, maintenance, and refresh cycles for technology.

ICC Credit 1.4: Commitment to Evidence-Based Research and Assessment

Intent

To develop and implement a regular, iterative process of research and assessment that informs development of learning spaces and contributes to an institutional culture of evidence-based design.

1 point

Criterion for the point

Create and maintain a learning space assessment and evaluation plan that involves multiple campus stakeholder groups with defined iterative evaluation cycles.

Evidence for this credit

Provide research and assessment plans and reports, including evidence of campus stakeholder engagement.

Additional considerations

- Conduct postoccupancy space performance evaluation(s).
- Provide regular, ongoing forums for user feedback on specific learning space(s) to improve support and operations.

ICC Credit 1.5: Campus Leadership for Learning Spaces

Intent
To provide leadership, i.e., through creative, innovative projects, in integrating learning spaces with academic or IT strategies.

1 point

Criterion for the point
Integrate learning spaces with strategic IT, school, and/or academic department contexts in a creative or innovative way that falls outside ICC credits 1–4.

Evidence for this credit
Provide evidence of an initiative, project, policy, or procedure that integrates learning space planning or design with the academic or campus IT context and in a new or innovative way.

Additional considerations
- Demonstrate impacts of innovative leadership, such as new policies or practices around learning space development and design.
- Establish new benchmarks for renovation or new construction of learning spaces with institutional buy-in.
- Create a campus learning space committee or similar body that provides principles and guidelines for learning spaces.

Section 2: Planning and Design Process (PDP)

Credits included in this section:

2.1	Stakeholder Engagement
2.2	Evidence-based Planning and Design
2.3	Pilots and Prototype
2.4	Evaluation Plan
2.5	Dissemination of Findings

Total points available in this section: 7

Weighted percentage of total points available: 15%

PDP Credit 2.1: Stakeholder Engagement

Intent
To involve and include all stakeholders and strategic partners of the learning spaces planning process.

1 point

Criterion for the point
Include stakeholder involvement in all stages of the planning and design processes.

Evidence for this credit
Provide evidence of substantive engagement of the users, operators, and senior administrators to offer input on needs, feedback on proposed solutions, and evaluation of what has been done. Engage stakeholders through workshops, interviews, surveys, observational studies, photo diaries, town hall meetings, charrettes, or other means.

Additional considerations
Stakeholders could include representatives of instructors, learners, curriculum development staff (such as a teaching and learning center), academic technology/IT staff, facilities planning, alumni, and administration:

- Demonstrate engagement on a project basis where appropriate.
- Provide a communications plan that is designed to inform stakeholders of relevant information and to allow them to provide ongoing input.
- Provide summaries of meeting notes, user surveys, reports, or other written evidence of engagement.
- Solicit evidence during development of the planning and/or design process to provide feedback on concepts, progress plans, and/or pilot projects.
- Gather input after space occupancy to ensure programmatic and user needs continue to be met.
- Provide evidence of attempts to engage stakeholders to give feedback on how well existing learning spaces are performing.

PDP Credit 2.2: Evidence-Based Planning and Design

Intent
To base planning or design on research and/or documented best practices in learning space strategy and design.

1–2 points

Criteria for the points
To obtain 1 point, do both of the following:

1. Consult literature, online resources and other experts in the field.
2. View peer exemplars virtually.

To obtain an additional point, do the following:
On-site visits of exemplars locations.

Evidence for this credit
- Provide documentation of consultation with published best-practices, benchmarking tours, or consultation with a recognized learning space planner/design expert.
- Provide documentation that associates specific design strategies employed with corresponding best practices.

Additional considerations
- Investigate literature on best practices in learning space design.
- Benchmark successful spaces or inspirational examples (e.g., via tours, reports, etc.).
- Conduct benchmarking tours to talk with peers about spaces they have developed.
- Engage on-campus or external learning space planning/design experts.
- Allocate project funds to support these activities.
- For ideas on process, consult the Learning Space Toolkit.
- For images and information on comparable spaces, consider the FLEXspace repository of learning spaces.

PDP Credit 2.3: Pilots and Prototypes

Intent
To designate a space, room, or building to serve as a prototyping space for ideas to be considered in learning space design.

1–2 points

Criteria for the points
To obtain 1 point, do the following:
Use the design, installation, and testing of an existing space to test concepts and drive consensus around strategies for new design solutions for a space.

To obtain an additional point, do the following:
Convert or allocate a space for ongoing human scale prototyping or build a dedicated space to use as an institutional resource for this purpose. Use this space to create tangible mock-ups to assess proposed design elements through at scale prototyping of proposed solutions.

Evidence for this credit
Photographs, plans (if applicable), and documentation of procedures of prototyping.

Additional considerations
- *Physical mock-up:* Create physical approximations of design features (e.g., full-scale mock-ups with temporary materials to represent key attributes of the proposed space(s)).
- *Functional prototype:* Modify an existing space to test functionality of the proposed design, new tools, or systems. Bring in learners, instructors and others who are likely going to use or be responsible for the space in some way to go through structured exercises of uses instructors expect to make of it.
- *Pilot space:* Build a working prototype of a learning space design with proposed materials, technology, and dimensions to evaluate through actual use (e.g., prior to building additional spaces).
- *Component test:* Acquire key components in reduced quantities (e.g., chairs, furniture, etc.) from vendor partners to make available to instructors, learners and others so that they can "try out" some of the possible furniture, software, AV controls, or other elements that are being considered for this space/project.
- Evaluate of the above pilots through observational studies, surveys, use diaries, data capture, interviews, questionnaires, etc.

PDP Credit 2.4: Evaluation Plan

Intent
To determine whether the potential of learning spaces has been realized in practice.

1 point

Criterion for the point
Create an evaluation plan to determine the degree to which the design aspirations or goals have been met and provide plan documentation.

Evidence for this credit
Provide documentation of the evaluation methodology and a timetable for the assessing learning spaces campus-wide.

Additional considerations
- Assess the space performance in relation to the project goals.
- Identify observable, concrete measures of success.
- Ensure that stakeholder questions have been addressed in the evaluation plan.
- Employ multiple means of evaluation (e.g., quantitative, qualitative, observation).
- Gather baseline data (e.g., usage and satisfaction) and compare with postoccupancy evaluation of the same.
- Utilize established survey instruments, scoring rubrics, or other assessment tools.

PDP Credit 2.5: Dissemination of Findings

Intent
To share findings and lessons learned from the research, planning, piloting, or evaluation of learning space(s).

1 point

Criterion for the point
Make publicly available research, evaluation, piloting, or planning findings so that other institutions can benefit from this work.

Evidence for this credit
Upload relevant information to FLEXspace and make it available to the community. Alternatively, produce evidence of the dissemination of findings via channels such as conference sessions, journal articles, or published reports.

Additional considerations
- Make findings and project design information available through institutional websites.
- Findings can contain engagement strategies, best practices employed, evaluation findings, key design principles that informed the design, and pilot projects.
- Publish articles or papers.
- Host or participate in conference or symposium with published and/or recorded proceeding.
- Contribute to a repository of learning space case studies.
- The LSRS process should be considered a source of ongoing documentation of the thinking and strategic, implementation, and assessment process for space planning for teaching. It is the institutional memory for learning space design for the campus.

Section 3: Support and Operations (SO)

Credits included in this section:

        3.1   Support
        3.2   Space Orientation and Training
        3.3   Training of Support Team
        3.4   Faculty Development
        3.5   Financial Sustainability of Operations
        3.6   Scheduling Systems
        3.7   Diverse Patterns of Use

Total points available in this section: 7

Weighted percentage of total points available: 15%

SO Credit 3.1: Support

Intent
To provide ongoing, timely, physical and/or virtual support for learning spaces.

1 point

Criteria for the point
To obtain credit, do all of the following:

1. Provide the ability to contact support professionals for immediate or just-in-time help from within the learning space.
2. Provide the ability for support professionals to remotely monitor and control room systems to identify and respond to problem issues.
3. Provide documentation in the space and/or online that describes the capabilities of the room and answers frequently asked questions.

Evidence for this credit
- Provide a support link so that users can directly communicate with classroom support professionals.
- Provide virtual support via remote desktop or similar technology such that media/ technology configurations can be viewed and adjusted remotely.
- Provide analysis of log system used to collect analytics data on room status to more efficiently maintain the room.
- Provide illustrative resources (e.g., with a video) that demonstrate potential activities and configurations of space, as well as frequently encountered issues and their solutions.
- Create and implement a furniture management plan that provides direction on how furniture should "reset" to a default configuration and how it can be easily converted to multiple layouts.

Additional considerations
- Provide supplemental support during initial commissioning period for new spaces and at the beginning of a new term (when instructors may be trying new approaches) for existing spaces.
- Consider clustering learning spaces together or distributing support services throughout campus to ease support service.
- Assign a learning space professional to act as main point of contact for managing furniture, technology, and equipment.

SO Credit 3.2: Space Orientation and Training

Intent

To ensure that orientation and training on the specifics of a learning space are available to the learners, instructors, and staff using them.

1 point

Criteria for the point

To obtain credit, do both of the following:

1. Offer a regularly scheduled user orientation (or user orientation on demand) that introduces the functionality of the furniture, technology, audio, lighting, and other equipment and environmental systems associated with the space.
2. Provide online tutorials with suggested room configurations, including explanations of feasible options and activities the room can support. This resource may be combined with online resources created for SO Credit 3.1: Support.

Evidence for this credit

- Provide link to schedule of orientation(s) or request form for on demand orientation.
- Provide link to online tutorials.

Additional considerations

- Orientation sessions could include presentations or instructional scenarios to show how technology systems in the room could be utilized to support pedagogical activities.
- Provide a rehearsal space with equivalent technologies where instructors can receive an orientation and associated training and coaching. Rehearsal spaces may also provide video capture for later review.
- Provide incentives for instructors to attend orientation sessions.
- Consider that a default furniture configuration might not indicate a layout at all, but require all chairs and tables to be pulled to the side and stacked or nested after each session, encouraging the next class to consider how it would like to arrange the furnishings to best suit its learning activity.

SO Credit 3.3: Training of Support Team

Intent
To ensure that the learning space support team can troubleshoot, solve, and address commonly encountered problems in the learning space reactively and proactively.

1 point

Criterion for the point
Create, execute, and evaluate an internal training program for staff, including defining the necessary competencies, hypothetical problem scenarios and solutions, and success measures, including but not limited to customer service skills and tools and technology training.

Evidence for this credit
- Provide link to training website with copy of course materials.
- Provide evidence of staff competencies (e.g., response times, call numbers, escalation paths, etc.).

Additional considerations
- Create user profiles that describe the needs and typical activities for different types of users.
- Map the user/customer journey and identify service points where services need to be provided.
- Require staff to achieve certification in tools or technology (for example, the InfoComm CTS certification for AV professionals).

SO Credit 3.4: Faculty/instructor Development

Intent
To enable continuous learning and development of faculty and instructors in the use of new technology, tools, and capabilities of learning spaces.

1 point

Criteria for the point
To obtain credit, do both of the following:

1. Offer educational opportunities for faculty and instructors to learn about new techniques and technologies, take best advantage of affordances to support in-class strategies, and discuss opportunities and challenges with peers and support staff.
2. Provide online resources such as articles, FAQs, and support contact information to assist faculty.

Evidence for this credit
- Provide link to workshops, consultations, and faculty/instructor development services and offered activities.
- Provide link to online resources or tutorials.
- Provide summary of annual data on offered activities.

Additional considerations
- Provide space and consultation services to assist faculty and instructors in developing classroom materials and activities.
- Facilitate the observation, evaluation, and coaching of faculty and instructors in reviewing their teaching practices through the use of rehearsal spaces, video capture, or observation in the teaching space itself.
- Offer case studies for use of the space that describe learning objectives, teaching activities used, benefits, and outcomes.
- Facilitate the creation of a faculty and instructors community of practice focused on best uses of learning space affordances.

SO Credit 3.5: Financial Sustainability of Operations

Intent
To manage resources so that learning spaces can perform as intended and be maintained, supported, and improved over time.

1 point

Criteria for the point
To obtain credit, do both of the following:

1. Create, execute, and evaluate a resource management plan for learning spaces that covers anticipated expenditures for technology, furniture, and operations.
2. Maintain a clear process to update annually the resource management plan that reflects changes in technology and use patterns such that equipment and staffing expertise stays current.

Evidence for this credit
- Provide link to multiyear resource management plan that covers the life cycle of learning spaces.
- Describe process whereby learning space expenses are factored into the annual budgeting process.
- Provide a multiyear staffing plan in alignment with anticipated changes to technology, including potential updates to certifications.

Additional considerations
- The resource management plan should take into consideration the number of staff, their skills, and the continuity of the teams.
- Benchmark resource management planning and allocation at peer schools.
- Develop appropriate chargeback policies for events outside the unit, especially those that are charging participants to come to campus (e.g., summer conferences).
- Coordinate with facilities staff such that appropriate markers and cleaning materials are purchased so that writing surfaces function to their specification.

SO Credit 3.6: Scheduling Systems

Intent
To provide users with a room-scheduling system that enables them to be scheduled in learning spaces that match their teaching or learning needs.

1 point

Criteria for the point
To obtain credit, do both of the following:

1. Provide a room-scheduling system for instructors to request teaching space aligned with their teaching needs, which includes information on the type and flexibility of furnishings, potential configurations, and space affordances including available technologies and equipment capabilities.
2. Make room-scheduling system data on availability and space attributes and use (such as total net area and area per station/seat) for use by facilities management and academic planners.

Evidence for this credit
- Provide link to an online room-scheduling system that makes each room's affordances clear so instructors can request spaces that best align with their intended pedagogy.
- The room booking categorization terminology should identify active learning spaces and enable instructors to request them if they wish.
- Provide evidence of transparency on how room-scheduling system makes decisions.

Additional considerations
- Incorporate information in the class-scheduling database on walking time/distance between classrooms.
- Investigate how different course schedule grids of various colleges or programs may be a deterrent to the promotion of active learning pedagogies, which usually require more extended class periods to enable collaborative group work or project activities, or to student teams coordinating on interdisciplinary project work.
- Gather information to discover why certain rooms might be more or less popular than others. Conduct data gathering in an ongoing way.
- Provide a listing of room affordances accessible to learners who may wish to use rooms afterhours.

SO Credit 3.7: Diverse Patterns of Use

Intent

To operate and support learning spaces to enable the highest possible return on investment (ROI) by allowing for learning engagements outside of normal class hours.

1 point

Criterion for the point

Provide flexible access to learning space for learners and instructors outside of typical class times.

Evidence for this credit

- Provide link to space management policies that permit the use of learning spaces by multiple user populations on demand (e.g., use of classrooms by learners studying at night) or evidence that it is allowed.
- Provide link to an online space booking system that enables groups to seek and reserve meeting spaces to work together.

Additional considerations

- Spaces should be made available in the evenings, at night, over weekends, and whenever regular classes are not in session (e.g., during summer).

Part B: Environment, Furnishings, Layout, and Technology

Section 4: Environmental Quality (EQ)

Credits included in this section:

       4.1   Daylight
       4.2   Views to Outdoors
       4.3   Interior Visibility
       4.4   Lighting Control
       4.5   Thermal Comfort
       4.6   Acoustic Quality
       4.7   Environmental and Cultural Inclusiveness
       4.8   Accessibility and Universal Design

Total points available in this section: 9

Weighted percentage of total points available: 20%

EQ Credit 4.1: Daylight

Intent
To support learning and improve concentration and engagement by providing daylight into learning space.

1 point

Criterion for the point
Provide direct access (e.g., windows) or indirect access (e.g., skylights or clerestory windows) to daylight and the means to control it with veiling screens, blinds, or blackout screens.

Evidence for this credit
- Photographs of the space.
- Architectural drawings that indicate windows and/or skylights.

Additional considerations
- Refer to *LEED v4 for Building Design and Construction,* EQ Credit: Daylight (PDF available here) for best practice standards.

EQ Credit 4.2: Views to Outdoors

Intent
To support learning and engagement by providing windows with views to the exterior.

1 point

Criterion for the point
Provide direct line of sight to the exterior of the building (i.e., through glass) with quality views that include vegetation, human activity, or objects at least 25 feet from the exterior of the window.

Evidence for this credit
- Photographs of the space.
- Architectural drawings that indicate windows and/or skylights.

Additional considerations
- Refer to *LEED v4 for Building Design and Construction*, EQ Credit: Quality Views (PDF available here) for best practice standards.

EQ Credit 4.3: Interior Visibility

Intent
To provide adequate visibility within a space from participants to presenters, to course content, to demonstrations, and to other participants.

1 point

Criterion for the point
Provide unobstructed views for all participants to see one another, to see information on displays or writable surfaces, and to engage in collaborative discussions.

Evidence for this credit
- Plans with information on seating layout, aisles, and display locations with dimensions and sightlines indicated.
- Photographs of sightlines taken from typical seating locations within the space.

Additional considerations
- Maximize ability of participants within the audience in a large space to face one another for more effective dialogue (e.g., u-shaped case study room layouts are preferable to lecture halls that have all seats facing the presenter).
- In discussion spaces such as seminar rooms, all participants should be able to see each other and have unobstructed view of displays. (For example, a meeting room with a long table and display at the far end blocks the sightlines of many of the participants to the display; nonhierarchical table layouts are preferable.)
- In rooms with flexible layouts, enable participants to see all presenters and/or visual displays and/or writable surfaces by turning their chairs up to 180 degrees.
- In rooms designed for team-based activities, provide views that enable team members to easily collaborate with shared displays or other equipment (e.g., fixed peninsula-shaped tables with a shared display).
- Consider tradeoffs between sightline quality and ease of supporting both small group work and presentations. For instance, in tiered rooms with two rows per tier to enable small group discussion, it may be desirable to tolerate slightly compromised sightlines to the instructor in order to support small group discussion (refer to TT Credit 6.3: Visual Displays).
- In presentation-focused spaces such as lecture halls, configure seats, tiers, walls, and visual displays to conform to best practices for sightlines and screen distances asserted in the *AV Design Reference Manual*, Chapter 13: Interior Design.
- Provide adequate ceiling height such that the audience can see both the presenter and screens simultaneously (see *AV Design Reference Manual*, Chapter 13: Interior Design).

EQ Credit 4.4: Lighting Control

Intent

To ensure optimal flexibility of lighting control appropriate to different learning activities.

1–2 points

Criteria for the points

To obtain 1 point, do the following:

Provide dimming capability or preset brightness controls for separate zones for separate activities, such as for a main seating area and for perimeter boards/screen areas.

To obtain an additional point, do the following:

Provide dynamic lighting control (or presets) where appropriate related to hue, saturation, and color, as well as brightness.

Evidence for this credit

- Photographs of various lighting conditions with information on zones.
- Learner and instructor feedback on lighting control to support a variety of learning activities.

Additional considerations

- Create consistency of lighting control systems across classroom stock.
- Design preset controls to accommodate a range of different activity use cases (e.g., presentation, discussion, video replay).
- In areas of informal small group or individual seating, enable users with controls to moderate the lighting to be appropriate to their activities (e.g., by-task lighting).

EQ Credit 4.5: Thermal Comfort

Intent
To ensure thermal conditions of spaces are conducive to learning.

1 point

Criteria for the point
To obtain credit, do both of the following:

1. Comply with *ANSI/ASHRAE Standard 55-2013, Thermal Environmental Conditions for Human Occupancy* (available here) for maintaining uniform comfortable temperature across the learning space.
2. Provide participant control of thermal comfort controls, such as operable windows, a thermostat, or other means to adjust at least one of the following in the room within a reasonable range: temperature, air speed, and/or humidity.

Evidence for this credit
Learner and instructor feedback on consistency of thermal comfort within the space.

Additional considerations
- Refer to *LEED v4 for Building Design and Construction*, EQ Credit: Thermal Comfort (PDF available here).
- Note that if occupants remark on the temperature of the space (too hot, too cold, or fluctuating too much) it's taking attention away from learning.

EQ Credit 4.6: Acoustic Quality

Intent
To enable occupants to hear presenters, audio content, and one another through effective acoustic design of the room.

1 point

Criteria for the point
To obtain credit, do the following:

1. Follow *ANSI/ASA S12.60-2010/Part 1 American National Standard Acoustical Performance Criteria, Design Requirements, and Guidelines for Schools, Part 1: Permanent Schools* standards for acoustics in core learning spaces and ancillary learning spaces (available here after creating an account). These include noise-isolation design requirements and specific limits on background noise and reverberation from building services and utilities.
2. Design acoustics to enable participants farthest from the sound source to have a comparable listening experience to participants closest to the source. In addition, provide appropriate acoustic design so that groups working together can comfortably hear each other.
3. Provide sound amplification system if needed (see TT Credit 6.4: Sound Amplification).

Evidence for this credit
Provide learner and instructor feedback on consistency of acoustics quality within the space.

Additional considerations
- Refer architects to the ANSI/ASI guidelines for various size spaces including large classrooms and lecture spaces and for use of sound-absorbing materials and acoustical treatments.
- See the ANSI/ASI guidelines for recommendations about the effects of carpeting and furnishings on acoustics.
- Consider the various aspects that contribute to acoustic performance, such as building envelop design, window ratings and interior materials; HVAC systems, vibration controls, white noise systems; and sound amplification systems or other technology interventions (see TT Credit 6.4: Sound Amplification).
- Consider active versus passive acoustic controls.

EQ Credit 4.7: Environmental and Cultural Inclusiveness

Intent

To create an aesthetically pleasing, stimulating and culturally inclusive atmosphere that helps promote engagement in learning activities.

1 point

Criterion for the point

Users perceive the physical environment to be welcoming, stimulating, engaging, and culturally inclusive as a setting conducive to learning.

Evidence for this credit

- Photographs.
- Provide learner and instructor feedback on visual environment.

Additional considerations

- Refer to benchmarks from the National Survey of Student Engagement (NSSE) such as those for "creating a supportive campus environment."
- Use color and art to enhance the learning environment, provide variety, and suggest activities it can support.
- Create a rich visual environment, perhaps using curves and shapes to go beyond a white-walled box for a classroom, or integrating ways to display visual material.
- Use high-quality finishes and furnishings to convey a sense of professionalism.
- Showcase the institution's cultural diversity and values with artifacts, designs, and artworks that illustrate it.
- Showcase student work through physical or digital displays:

  ‣ Ensure the gender-neutral language is used to describe features.
  ‣ Consider the cultural context in which the space will live. If art is displayed in the classroom, ensure it is inclusive and supportive of diverse perspectives.

EQ Credit 4.8: Accessibility and Universal Design

Intent
To create an inclusive, safe, and accessible environment for diverse and differently abled participants.

1 point

Criterion for the point
Features of the space communicate that people from different backgrounds and with different abilities are included in the room's learning activities.

Evidence for this credit
Responses from user surveys.

Additional considerations
- Differently abled learners should be able to use the room in the same manner as other learners, following a Universal Design for Learning (UDL) approach. For example, instead of having only certain locations designed to be accessible, allow access everywhere—tables that are height adjustable for wheelchair access should be useable by all learners.
- Consider using pictorial representations for words where possible.

Section 5: Layout and Furnishings (LF)

Credits included in this section:

5.1	Proximities within Space
5.2	Movement through Space
5.3	Seating Density
5.4	Furniture Configuration Flexibility
5.5	Work Surfaces
5.6	Seating Comfort
5.7	Movable Partitions
5.8	Transparency
5.9	Access to Adjacent Informal Learning Spaces
5.10	Writable Surfaces
5.11	Physical Storage
5.12	Future Proofing

Total points available in this section: 16

Weighted percentage of total points available: 20%

LF Credit 5.1: Proximities within Space

Intent
To configure the room proportions of a space to optimize interaction among and between participants.

1 point

Criteria for the point
To obtain credit, do both of the following:

1. Optimize proximity between all occupants and maximize participants' ability to face each other and read human signs of engagement.
2. Optimize proximity between instructors and the greatest percentage of participants.

Evidence for this credit
Provide floor plan and furnishings plan with dimensions or other tangible evidence that room is designed to meet the criteria.

LF Credit 5.2: Movement through Space

Intent

To enable the easy movement of all participants within the space to support communication and to facilitate interaction.

1 point

Criterion for the point

Enable participants to easily circulate, interact, and form groups. Provide adequate space for participants to move and circulate among key components of the room, such as seats, tables, writing surfaces, and displays.

Evidence for this credit

Provide floor plans with room dimensions and furniture layouts that demonstrate how participants can move through the space and participate in active learning activities, above and beyond meeting ADA and other accessibility requirements.

Additional considerations

- Provide adequate space between tables or work areas for all participants to circulate, interact, and combine in different teams.
- Provide sufficient space and pathways for instructors and peers to circulate when the space is configured for groups.
- Enable participants to walk between table and walls in order to access writable surfaces, displays, and one another.
- If using movable furniture, ensure that there is enough room to be able to actually move the furniture away from writable walls and that cables to electrical outlets do not obstruct activity at the walls.
- Where a tiered or sloped floor configuration is desirable:
  - Consider sloped rather than stepped aisles to allow more universal access options and easier circulation.
  - For a sloped floor configuration without stairs, consider limiting the slope of the room (vertical) over run (horizontal) to 1:12.
- Consider universal design principles for accessibility. Instead of isolating "accessible" areas of the room, ensure all areas are accessible.

LF Credit 5.3: Seating Density

Intent

To ensure that the density of seating and the space allocated per seat supports a desirable range of learning activities.

1–2 points

Criterion for the points

To obtain 1 point, do the following:
Provide a minimum of 25 square feet per person in any room configuration.

To obtain an additional point, do the following:
Provide 30 square feet per person. Density should be calculated by the total area of the entire room divided by the assigned room capacity.

Evidence for this credit

Provide floor plans with room dimensions and furniture layout(s) that demonstrate the square foot per seat.

Additional considerations

- Consider greater than 25–35 square feet per person to support active learning activities. As the space per seat increases so do the different ways people can interact with others, information, and tools/equipment.
- Allow sufficient space for room reconfiguration options. The greater the need for flexibility of layout, the more space is needed per seat.
- Special equipment, such as fixed computers or lab equipment, may require more space per seat.

LF Credit 5.4: Furniture Configuration Flexibility

Intent
To provide furniture that is easily movable and configurable to support a range of learning activities.

1–3 points

Criteria for the points
To obtain 1 point, do the following:
Provide movable chairs.

To obtain an additional point, do the following:
Provide movable tables.

To obtain an additional point, do the following:
Provide stackable/nestable chairs and/or tables.

Evidence for this credit
Provide furniture inventory and room layout(s).

Additional considerations
- Provide height-adjustable seating wherever possible.
- In lecture halls that have two rows (or collaborative tables) per tier or terrace, consider chairs that move and/or rotate so that participants can more easily collaborate.
- Podiums, when needed, should also be movable and/or removable. Nestable chairs may provide greater flexibility of layout options, but chairs on casters may be better ergonomically.

LF Credit 5.5: Work Surfaces

Intent
To provide furniture with adequate work surface to accommodate several devices and materials that participants may bring.

1 point

Criterion for the point
Provide sufficient work surface area per seat, sized to enable simultaneous use of a laptop, tablet, or other portable devices as well as paper materials.

Evidence for this credit
Provide evidence that work surfaces are at least 30 inches wide by 24 inches deep.

Additional considerations
- Consider choosing furniture that does not have a left- or right-handed bias. With tablet-arm chairs, provide some left-handed models.
- Typical tablet armchairs are not recommended. Some freestanding, castered tablet armchairs are designed with larger work surfaces and may be more useful.

LF Credit 5.6: Seating Comfort

Intent
To provide seating that is adjustable and comfortable for extended periods of time, an hour or more.

1 point

Criterion for the point
Provide seating that is comfortable for a variety of body types, heights, and accommodations and ergonomically appropriate.

Evidence for this credit
Provide photo, diagrams, or cut sheet information on seating used in the space.

Additional considerations
- Provide adjustability in terms of height, pitch, or in other dimensions.
- Consider consulting an ergonomist on the selection of furniture.
- Consider the durability and sustainability standards referenced in the *ANSI/BIFMA e3-2014e Furniture Sustainability Standard*, section 5.9.1 (available here).

LF Credit 5.7: Movable Partitions

Intent
To enable spaces to be partitioned for different learning activities.

1 point

Criterion for the point
Provide a movable panel system, or movable partitions that can be manipulated by users of the space, quickly and easily.

Evidence for this credit
Provide photos and descriptions of the system.

Additional considerations
- Viable solutions include panels on wheels or castors, a panel system designed to hang from a ceiling grid or wall hangers, or any solution that allows for the effective subdivision of a larger space.
- Consider other functionalities for partitions including as writing surfaces or to provide visual transparency or acoustic treatments.
- Partitions may either be designed as floor to ceiling to fully separate a space or as freestanding partitions within an open area in order to subdivide group activities.

LF Credit 5.8: Transparency

Intent
To provide visual connections between adjacent but physically separate spaces to enable exposure and visibility of learning activities.

1 point

Criteria for the point
To obtain credit, do one of the following:

1. Provide views through the use of transparent materials or the introduction of openings or sightlines between rooms, floors, or major areas.

   or

2. Provide transparent vision panels that allow views into and out of the spaces where learning activities occur.

   or

3. Showcase products of learning activities within a space through the use of digital or analog displays outside of the space.

Evidence for this credit
Provide photos of transparency solutions.

Additional considerations
- Consider the extent to which users can control the amount of transparency including shades, movable partitions, or electroluminescent glass.
- Visual transparency into spaces can promote interest, curiosity, and serendipitous learning.
- Visual transparency can also bring feelings of vulnerability and unease (the "fishbowl" phenomenon) and might need to be modulated in some spaces.

LF Credit 5.9: Access to Adjacent Informal Learning Areas

Intent
To allow learning activities to extend into adjacent areas, encouraging interaction and extension of the learning experience.

1 point

Criterion for the credit
Intersperse informal learning spaces next to formal teaching spaces.

Evidence for this credit
Provide photos and floor plans that show the adjacency.

Additional considerations
- Consider equipping adjacent spaces with affordances for short, ad hoc meetings and for collaboration.
- Include breakout areas or "front porch" spaces next to classrooms for connecting before or after class.
- Use sliding barn doors to open up a classroom and transform it into an afterhours informal study space.
- Consider 3–5 assignable square feet (ASF) per classroom seat of informal learning space outside of rooms to support discussion before and after class.

LF Credit 5.10: Writable Surfaces

Intent
To provide abundant writable surfaces to facilitate interaction for individuals and groups.

1 point

Criterion for the point
Provide multiple surfaces/displays accessible to all participants on which they can write physically and/or digitally.

Evidence for this credit
Provide photographs of spaces.

Additional considerations
- Ensure that writable surfaces are not obstructed by pull-down screens or other objects so that they are always visible.
- The intention is to provide as much surface to be writable as possible. Consider:
  - Surfaces that are both writable and projectable.
  - Large, wall-mounted whiteboards/blackboards and/or flipcharts.
  - Writable wall surfaces on one or multiple walls.
  - Movable writable panels on casters or a wall/ceiling-mounted system.
  - Writable table surfaces (e.g., glass, whiteboard).
  - Digitally interactive table surfaces that enable writing with gestures and/or stylus.

- Where writable spaces are interspersed with nonwritable surfaces, it is helpful to indicate clearly which surfaces support erasable writing.

LF Credit 5.11: Physical Storage

Intent
To provide storage within learning spaces for instructor/student belongings, equipment, or furnishings.

1–2 points

Criterion for the points
To obtain 1 point, do the following:
Provide storage for instructor/student belongings.

To obtain an additional point, do the following:
Provide storage for equipment and furnishings.

Evidence for this credit
Provide photos of storage solutions.

Additional considerations
- For flexible or multipurpose rooms with 50 seats or more, provide furniture and equipment storage equivalent to 5–10% of the room area.
- When security is an issue, consider lockable storage.
- The following functions should be considered:

  ‣ Large movable displays that can be wheeled between storage and the learning space.
  ‣ Laptops and laptop carts for individual or shared use.
  ‣ Artifacts, resources, teaching kits for various disciplines.

- Additional furniture components so layouts can be changed rapidly to accommodate different types of activities.
- Provide enclosed walk-in storage room sufficient to store extra furnishings and carts, with power:

  ‣ Consider hooks for student belongings around the periphery of the classroom or at tables or as part of chairs.

LF Credit 5.12: Future Proofing

Intent
To ensure that learning spaces can evolve to effectively support new teaching and learning models over time.

1 point

Criterion for the point
Design room infrastructure to support or adapt to changing uses over time.

Evidence for this credit
Provide documentation and rationale.

Additional considerations
- Install a raised floor containing power and data infrastructure and outlets.
- Provide a grid of power distributed across the floor.
- Consider open cable trays, hanging tracks, and other easily accessible solutions as a potential option to ease changes of equipment over time.
- Consider the potential for reconfiguration or a change in function in the future (for example, tiered lecture hall seating can be built with steel frame structures rather than poured concrete).
- Install wireless solutions for technology where possible.

Section 6: Technology and Tools (TT)

Credits included in this section:

6.1	Electrical Power
6.2	Network Connectivity
6.3	Visual Displays
6.4	Sound Amplification
6.5	Audio/Visual Interface and Control
6.6	Distributed Interactivity
6.7	Session Capture and Access

Total points available in this section: 10

Weighted percentage of total points available: 20%

TT Credit 6.1: Electrical Power

Intent

To ensure that all participants in a space have access to electrical power to support the wide variety of technologies used in learning activities.

1 point

Criterion for the point

Provide convenient access to electrical power for end-user devices through dedicated power at participants' location or via charging stations in the room.

Evidence for this credit

Description of end-user power outlets in rooms.

Additional considerations

- Outline a range of desirable or anticipated activities and their power requirements to determine appropriate capacity for a range of usage scenarios.
- Use a distribution grid in the floor to provide flexibility in positioning power receptacles and to accommodate multiple layout options.
- Provide appropriate receptacle locations or cable management raceways such that cables do not obstruct traffic paths.
- Explore inductive charging options and "fast charge" battery stations in proximity to classroom clusters.

TT Credit 6.2: Network Connectivity

Intent
To enable adequate network performance and access for all participants and intended learning activities.

1 point

Criterion for the point
Provide wired connectivity to strategic areas of the room that require high-bandwidth/low-latency connections and wireless connectivity with activity appropriate bandwidth, latency, and capacity to support connections for all occupants, including guests, available in real-time without prior arrangement.

Evidence for this credit
Describe network plans, bandwidth, and connectivity options for rooms and Wi-Fi coverage.

Additional considerations
- Outline range of desirable or anticipated activities and their potential bandwidth requirements to determine appropriate bandwidth capacity.
- Determine cabled connectivity requirements at strategic points (e.g., presenter station, participant clusters, etc.) to allow for several different configurations.
- Design flexibility to allow for increased connectivity as demanded by course applications (e.g., firewall settings, traffic shaping).

TT Credit 6.3: Visual Displays

Intent
To enable robust sharing of visual data by making it easily available, visible, and/or readable by all participants.

1–3 points

Criteria for the points
To obtain 1 point, do the following:
Provide a single visual display of a contemporary standard appropriate to the intended room use and function, layout, dimensions, and content types. Displays should allow multiple input with the ability to adapt easily to evolving cabling and input standards, following relevant InfoComm standards.

To obtain an additional point, do the following:
Provide dual displays or dual inputs to large display(s) appropriate to the intended room use and function, layout, dimensions and content types.

To obtain an additional point, do the following:
Provide multiple displays (fixed and/or mobile) with multiple inputs or interactive surfaces as allowed by the capacity and configuration of the room to support presentation, discussion, and collaboration activities for some or all participants.

Evidence for this credit
Photograph or documentation of room.

Additional considerations
- For presentation spaces, follow best practices for display size and viewing angles asserted in the *AV Design Reference Manual*, Chapter 13: Interior Design.
- Provide lighting and window treatment controls at projection and display locations. The control of ambient light affects image contrast (see EQ Credit 4.4: Lighting Control).
- When considering interior design and colors, use darker, matte (nonreflective) paint colors near screens to aid with image contrast.

TT Credit 6.4: Sound Amplification

Intent
To enable all participants to hear and communicate clearly in support of learning and teaching activities.

1–2 points

Criterion for the points
To obtain 1 point, do the following:
Enable all participants in a learning space to clearly and easily hear presenters and one another.

To obtain an additional point, do the following:
Ensure conversations within groups can be easily heard without distraction from other noises in the room (other groups, ambient noises, etc.).

Evidence for this credit
Provide audiovisual information on audio quality of the room.

Additional considerations
- Refer to *ANSI/ASA S12.60–2010/Part 1* for classroom audio distribution systems (5.5.1) for uniformity of coverage and sound pressure levels.
- Refer *AV Design Reference Manual*, Chapter 11: Acoustics.
- Refer to the 1991 ADA Standards for Accessible Design 4.1.3 (19) (b) (PDF available here) and the 2010 ADA Standards Accessible Design, section 219 (various formats available here) and relevant state guidelines for the use of assistive listening system (ALS) shields to accommodate participants with hearing impairments.

TT Credit 6.5: Audio/Visual Interface and Control

Intent

To enable instructors and learners to seamlessly manage audio/visual content across multiple output systems including installed displays, computers, and mobile devices.

1 point

Criterion for the point

Provide a graphical, user interface-based switching control for device and room setting that allows for the control of A/V technology by instructors and learners.

Evidence for this credit

Provide photographs, specifications of AV control system, and feedback from participants on use of system.

Additional considerations

- Provide ability to manage content across multiple outputs.
- Provide ability to manage content across personal devices, team displays, and room displays.
- Provide ability to manage access to control capabilities for shared resources.
- Allow interface control from student devices as well as from "traditional" instructor station control point(s).
- Provide ability to introduce content to entire group using personal device or other sources.
- Provide ability to share content easily with each other, one-on-one, or with small group in collaborative learning interactions.
- Consider creating a standard for interfaces to control systems to simplify support and ease of use across campus.

TT Credit 6.6: Distributed Interactivity

Intent
To enable full, synchronous participation in learning activities by groups in multiple, disparate locations.

1 point

Criterion for the point
Enable participants at each connected location to perceive each other's actions, allowing them to work collaboratively in creating, sharing, annotating, and displaying information, all at appropriate performance levels.

Evidence for this credit
Provide photographs and documentation of design features that enable distributed interactivity.

Additional considerations
Consider systems that enable any of the following scenarios:

- A presentation to be shared between multiple sites.
- Student questions/commentary to be shared between multiple sites.
- Student small group discussions to be shared between multiple sites.
- Ability for different participants to transparently switch between roles (e.g., presenter, editor) across multiple locations.

TT Credit 6.7: Session Capture and Access

Intent
To record presentations, group interactions, or conversations with local and remote participants and make these artifacts accessible asynchronously.

1 point

Criterion for the point
Capture presenter image, audio, and content, and have the ability to record whiteboard/blackboard annotations.

Evidence for this credit
Link to capture system on campus.

Additional considerations
- Consider providing instructor control over recordings.
- Provide video and/or audio recordings in formats that permit consumption with a variety of devices.
- Integrate session capture controls with room AV controls.
- Schedule and capture presentation and synchronized audio in a format that can be redistributed to users outside the classroom (e.g., via a learning management system and/or mobile devices).