![Durham College - Success Matters logo]

REIMAGINING OUR LEARNING SPACES

CLASSROOM STANDARDS REPORT
Reviewed November 2019

As part of our commitment to exemplary teaching and learning practices, Durham College (DC) has developed a comprehensive set of standards for our learning spaces. As cited in research discussed in this report, the best learning takes place in spaces designed to facilitate the implementation of active-learning pedagogies by supporting collaboration between students and faculty and students with each other. DC's standards have been developed considering the needs of students and faculty.

Background

In November 2018, a working group was struck with a mandate to develop a comprehensive set of classroom standards for DC. The working group established the following guiding principles.

Our classrooms should:

» strengthen our exemplary teaching and learning.

» focus on the student experience and student success.

» focus on active and collaborative learning.

» be flexible.

» be designed with consultation across all stakeholder groups.

» consider both teaching and assessment.

This cross-functional group included representatives from faculty, academic administration, facilities, ITS, audiovisual (AV) services, and scheduling. The group undertook consultations with students and employees in November and December 2018. Both groups were given the opportunity to provide feedback in person or via an online survey. Over 300 students and 120 employees provided input. Draft classroom standards were developed using this feedback. The draft standards were then reviewed and further refined by the working group, the college's Academic Leadership Team, Academic Council and the Program Coordinator team. These standards apply to classrooms that are centrally scheduled. They will be reviewed annually. Exceptions to these standards may be necessary from time to time. Exceptions will be reviewed collaboratively by the Associate V.P. Facilities and Ancillary Services, Associate V.P. Information Technology, and the Associate V.P. Academic.
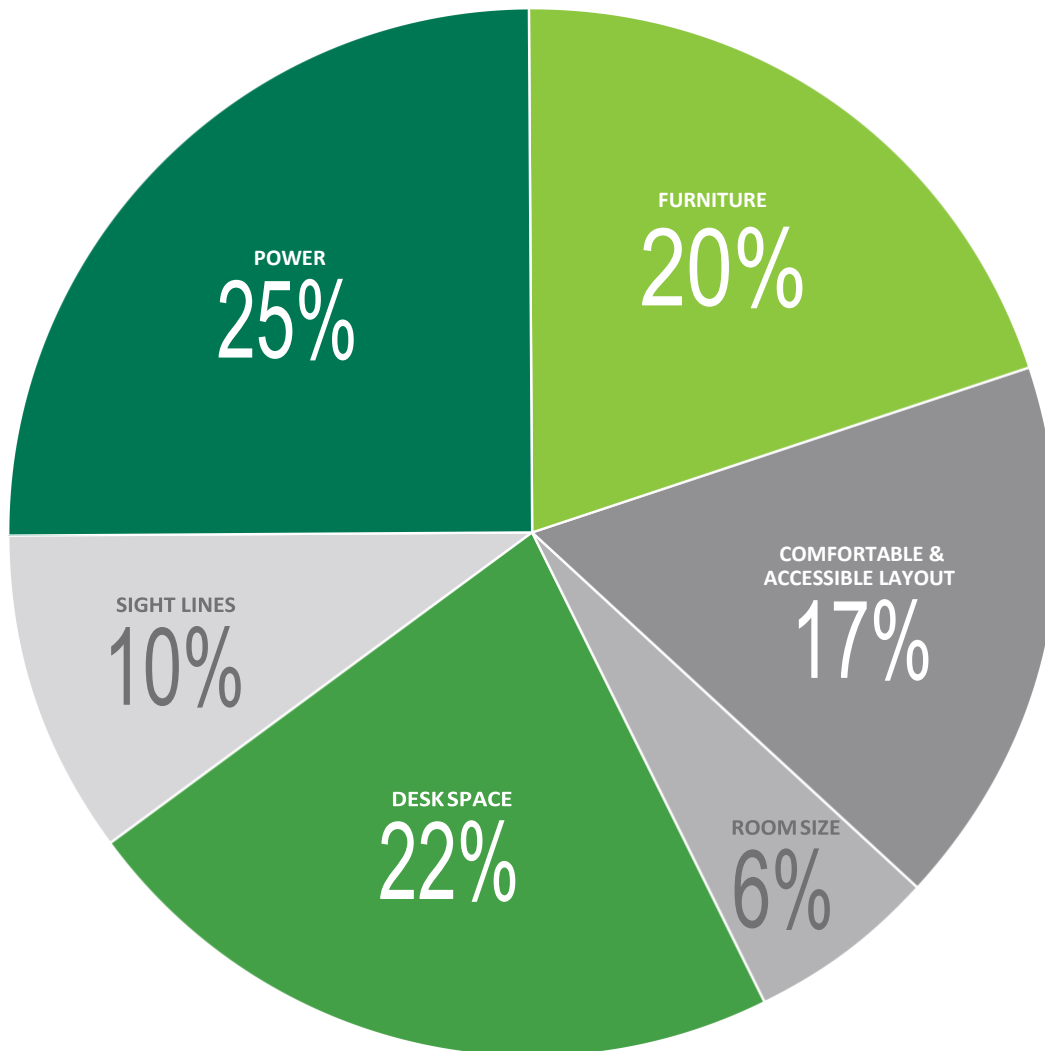
Summary of findings: students

Students' comments on "the perfect classroom space" focused on environmental themes such as proper light, space for materials, storage and comfort, as well as practical themes such as power, Wi-Fi and visibility of screens. Some key findings from our interactions with students include:

» Students have an average of two devices with them every day. They use these devices to take notes and to interact with their professors. Power at their desks and reliable Wi-Fi are important to students. Students don't view these devices as entertainment, but rather as important learning tools.

» In terms of AV technology, students want to be able to see with clear sightlines and to hear clearly.

» Students commented on desk space. This includes space at their desk where they would typically have a laptop, reading and writing materials. They also commented on space to store items that they bring with them.

» The comfort of chairs is important to students.

DEFINITIONS:

» Power and WiFi: refers to power at desks and a high-speed wireless Internet connection.

» Sight lines: refers to a student's ability to see a screen, whiteboard and the professor without obstruction.

» Furniture: refers to desks and chairs.

» Desk space: refers to the amount of space for books and materials at a student's desk.
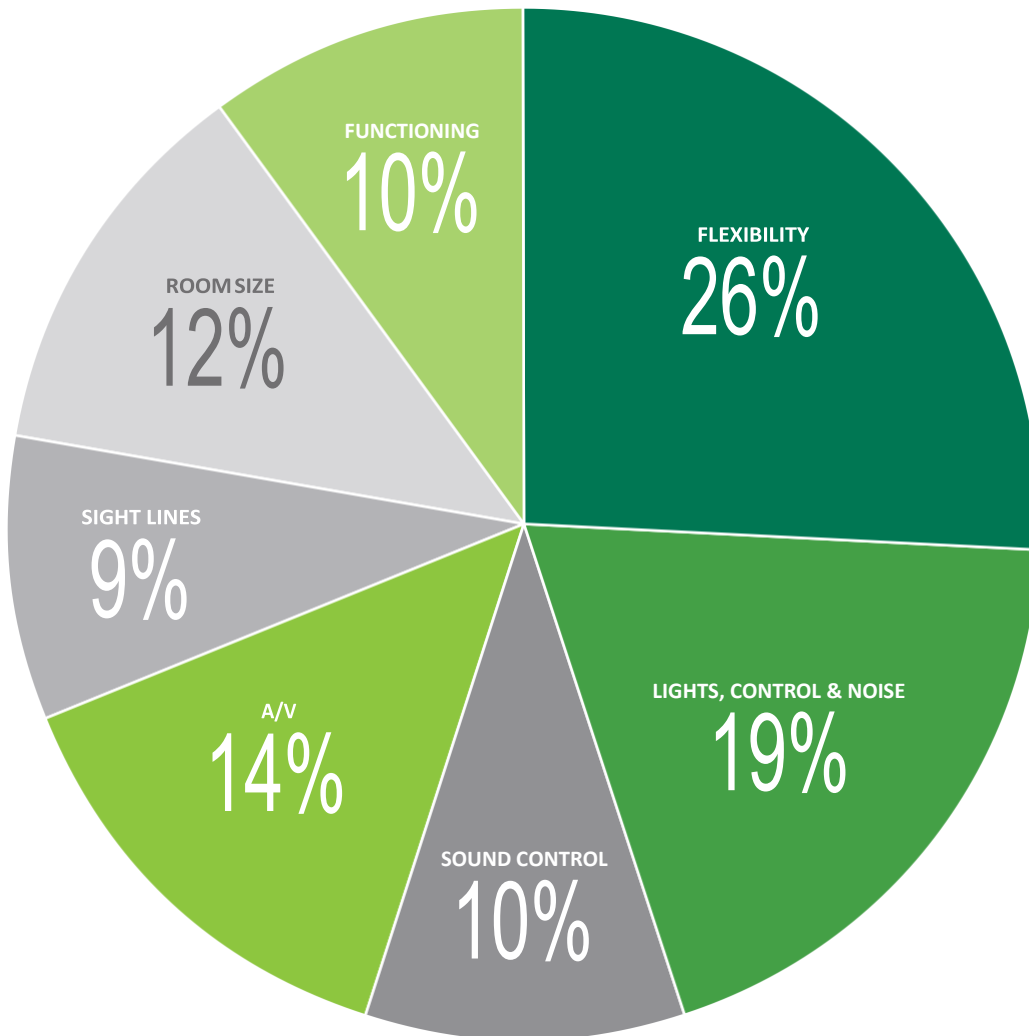
WHAT MATTERS TO STUDENTS:

Summary of findings: faculty

Faculty members' comments on "the perfect classroom space" focused on flexible classrooms for collaborative learning with room to move around. More practical themes that emerged include reliable technology with plenty of whiteboard space and good sight lines for AV. Some key findings from our interactions with faculty include:

» Flexibility is key. Faculty recognize the importance of active learning, but also note that a classroom must be able to go from active learning to a space suitable for assessment.

» Flexibility is also important with respect to light control in rooms.

» Reliable and functional technology in the classroom is important.

» Sight lines are important to faculty. Screens and whiteboards should be easy for students to see.

WHAT MATTERS TO FACULTY:

FUNCTIONING 10%
ROOM SIZE 12%
SIGHT LINES 9%
A/V 14%
SOUND CONTROL 10%
FLEXIBILITY 26%
LIGHTS, CONTROL & NOISE 19%

I have so many ideas for teaching in ways that are different and innovative. I wish we had more versatility in our classrooms.

DC FACULTY MEMBER

Active teaching and learning

The college's Academic Plan outlines a commitment to continually renewing learning spaces and resources with a focus on the implementation of 21st-century learning spaces and learning technologies (Goal 1, Objective 1.5).

Twenty-first-century learning spaces must focus on active learning.

ACTIVE LEARNING

Active learning is "anything course-related that all students are called upon to do other than simply watching, listening, and taking notes" (Felder & Brent, 2009). The consensus across years of investigation into teaching and learning in higher education concludes that active learning enhances student learning. The way that active learning is incorporated into a class may vary, but students have much to gain when they are made active contributors in their learning.

Students perceive greater knowledge and understanding gains with active learning (Braxton et al., 2008) and demonstrate this knowledge gain with enhanced test scores compared to traditional learners (Mello, 2013). Students can retain knowledge and understanding longer and are better able to broadly apply what they have learned when engaged in an active-learning environment (Waldrop, 2015).

Several research studies demonstrate the positive impact active learning can have upon students' learning outcomes. Some examples include:

» Development of graduate capabilities such as critical and creative thinking, problem solving, adaptability, communication and interpersonal skills. (Kember & Leung, 2005)

» Increased enthusiasm for learning in both students and instructors. (Thaman et al., 2013)

» student perceptions and attitudes towards information literacy. (Deltor et al., 2012)

Classroom standards established for Durham College (DC) must keep active learning at the forefront. Active learning requires flexibility in furniture and configuration as well as space for students to engage with each other and their faculty. Often, active-learning classrooms are technology-rich learning spaces featuring computing devices, either installed or brought into the room.

These principles are aligned with the student and faculty feedback; for instance, the most significant factor identified by faculty (26 per cent) referenced the importance of flexibility to support collaborative and active learning. Students also referenced the importance of furniture as a significant factor contributing to the "perfect classroom".

In order to facilitate active learning, significant research on optimal classroom design has been undertaken. This research shows that several classroom elements are important to consider. These elements are outlined below and are based on information adapted from the research conducted by Supporting Active Learning & Technological Innovation in Studies of Education (SALTISE).

Tables vs. desks:

» Tables are more effective for collaboration than individual desks. Research findings indicate that it doesn't seem to matter if the room offers one big table or several smaller tables that can be linked together without gaps.

» The ideal size of grouping is between four to seven. Below four, the chances of one or two students not showing up or being prepared is high, leaving groups too small. Above seven, the group seems to split into two.

» Tables free of obstacles (e.g., desktop computers) that obstruct the line of sight between students and large empty spaces in the middle (like large circular tables) help to promote collaboration between group members.

» The ideal number of table groupings seems to be between six and eight. This gives faculty the best opportunity to observe and manage each group's work.

Chairs on wheels:

» Active learning requires students to be engaged in classroom activities; they should be encouraged to move frequently. Having chairs on wheels reduces noise and makes it easy to get in and out of seats. It also facilitates movement around the room by allowing people and chairs to get out of the way.

» Large writable surfaces (e.g. whiteboards and interactive smartboards):

» In terms of writing surfaces, the more space to write, the more effective and flexible learning becomes.

» Writable surfaces are most useful when they are large (greater than 120 cm wide) and can accommodate at least four to five students working as a group.

» Retractable projection screens seem to take away writing spaces. It is important to consider using materials that can be both projection screen and writable surface.

Placement of furniture:

» Students are more likely to collaborate when they have access to whiteboards, which are generally attached to the walls. Moving tables away from the walls is recommended to facilitate the most effective collaboration.

» When placing furniture, it is important to consider the space required for faculty and students to walk around the room. Collaboration requires movement; movement requires space.

Assessments:

» When developing active-learning classrooms, the ability to conduct summative assessments must also be considered. There are furniture options which help to ensure the integrity of assessment.

Technology:

» Active-learning classrooms are often technology-rich learning spaces featuring computing devices, either installed or brought into the room. Often these devices are mobile devices brought in by students. The technology infrastructure needs to support this. Technology needs to be reliable and consistent.

DC's classroom standards take all of these factors into consideration.

Classroom standards: definitions

These classroom standards define five types of classrooms at Durham College (DC) (note: photos are for illustrative purposes only):

1. Seminar classrooms (20 students max.): Classroom with limited technology and ample space for alternative configurations of furniture. Used for active learning that does not require extensive technology. Suitable for small group discussions and interactions.

2. Technology-based collaborative classrooms (40 to 60 students): Classrooms designed with technology-based pods, where each student group has access to a screen. The professor can project any group's screen or project from the central podium.

3. Collaborative classrooms (40 to 60 students): A room with moveable furniture as well as power and data drops throughout the classroom so that students can work on their laptops collaboratively. Note, this can be used for laptop courses as well.

4. Laptop fixed classrooms (40 to 60 students): A hard-wired laptop classroom with fixed furniture and hard-wired data drops at each station.

5. Lecture classrooms (80 to 120 students): Classrooms with fixed seating and a centralized podium.

> A classroom that is comfortable, useable and welcoming makes a big difference to us when we are trying to learn.

DC STUDENT

Classroom standards: specifics

	1. SEMINAR	2. TECHNOLOGY-BASED COLLABORATIVE	3. COLLABORATIVE	4. LAPTOP FIXED	5. LECTURE
Desks	» Moveable tables that lock into place when needed and are stackable when not in use. » 65 cm x 140 cm of desk space per student.	» This room will include five to six pods for student group work. Each pod will have AV. There will also be a podium at the front.	» Moveable tables that lock into place when needed and are stackable when not in use. » 65 cm x 140 cm of desk space per student.	» Fixed. » 65 cm x 140 cm of desk space per student.	» Fixed. » 65 cm x 140 cm desk space per student.
Chairs	» Moveable chairs.	» Moveable chairs.	» Moveable chairs.	» Moveable chairs.	» Fixed seats.
Area per student (immediate)	» 2.5 square metres per student.	» 2.0 square metres per student.	» 2.0 square metres per student.	» 2.0 square metres per student.	» 1.8 square metres per student.
Lighting	» Controllable AV-compatible lighting. » Controls: labeled and easy to use. » One zone.	» Controllable AV-compatible lighting. » Controls: labeled and easy to use. » Two zones.	» Controllable AV-compatible lighting. » Controls: labeled and easy to use. » Two zones (one zone is whiteboard).	» Controllable AV-compatible lighting. » Controls: labeled and easy to use. » Two zones	» Controllable AV-compatible lighting. » Controls: labeled and easy to use. » More than two zones (depending on size).
Acoustics		» Amplified audio. » Desk mic for classes with more than 60 students; otherwise, instructor lapel mic available.			
Podium	» Movable. » Motorized.	» Movable. » Motorized.	» Movable. » Motorized.	» Movable » Motorized.	» Fixed. » Motorized.
Writable surfaces	» Whiteboard at front and both sides of room. » Positioned to not block screens. » Full tray for markers. » The bottom of the whiteboard should be approximately 90 cm from the ground. The top should be no higher than approximately 175 cm from the ground.	» Whiteboard at each pod. » Positioned to not block screens. » Full tray for markers. » The bottom of the whiteboard should be approximately 90 cm from the ground. The top should be no higher than approximately 175 cm from the ground.	» Whiteboard at front and both sides of room. » Positioned to not block screens. » Full tray for markers. » The bottom of the whiteboard should be approximately 90 cm from the ground. The top should be no higher than approximately 175 cm from the ground.	» Whiteboards (2) at front of room. » Positioned to not block screens. » Full tray for markers. » The bottom of the whiteboard should be approximately 90 cm from the ground. The top should be no higher than approximately 175 cm from the ground.	» Whiteboards (2 or more) at front of room. » Positioned to not block screens » Full tray for markers. » The bottom of the whiteboard should be approximately 90 cm from the ground. The top should be no higher than approximately 175 cm from the ground.
AV For all: » Clear instructions on how to use system. » Basic troubleshooting tools at the podium.	» One (1) projector. » Desktop computer. » Connections: DHMI/VGA; Aux.; AV; Sound; LAN.	» One (1) projector at each pod. » Web conferencing, » Connections: DHMI/VGA; Aux.; AV; Sound; LAN.	» One (1) projector. » Desktop computer. » Connections: DHMI/VGA; Aux.; AV; Sound; LAN.	» One (1) projector. » Desktop computer. » Web Conferencing. » Connections: DHMI/VGA; Aux.; AV; Sound; LAN.	» One (1) or two (2) projectors. » Desktop computers. » Web conferencing. » Connections: DHMI/VGA; Aux.; AV; Sound; LAN.
Power at desks	» Yes.	» Yes.	» Yes.	» Yes.	» Yes.
Wi-Fi	» High-density Wi-Fi.	» High-density Wi-Fi.	» High-density Wi-Fi.	» Ethernet to each station.	» High-density Wi-Fi.

All aspects of classroom design must be AODA compliant.