



BIOL*3670 Introduction to Wildlife Rehabilitation

Fall 2022

Section(s): DE01

Department of Integrative Biology

Credit Weight: 0.50

Version 2.00 - September 07, 2022

1 Course Details

1.1 Calendar Description

This course focuses on Canadian wildlife and ways to mitigate various human-animal interactions. There will be a specific emphasis on wildlife rehabilitation: its benefits, risks (to humans and animals), ethical concerns, principles of stabilization of sick and injured animals, and other key areas for consideration. Common presentations and underlying reasons for sick and injured animals that are admitted to a rehabilitation centre are presented. Whether in a wildlife centre or in the field, understanding important physiologic differences between species and how to stabilize animals for subsequent treatment by a permitted rehabilitator or a wildlife veterinarian are discussed.

Pre-Requisites: 1 of ANSC*2340, BIOL*2060, BIOL*2400, ZOO*2090

1.2 Course Description

This course focuses on Canadian wildlife and ways to mitigate various human-animal interactions. There will be a specific emphasis on wildlife rehabilitation: its benefits, risks (to humans and animals), ethical concerns, principles of stabilization of sick and injured animals, and other key areas for consideration. Common presentations and underlying reasons for sick and injured animals that are admitted to a rehabilitation centre are presented. Whether in a wildlife centre or in the field, understanding important physiologic differences between species and how to stabilize animals for subsequent treatment by a permitted rehabilitator or a wildlife veterinarian are discussed. This course focuses on Canadian wildlife and ways to mitigate various human-animal interactions. There will be a specific emphasis on wildlife rehabilitation: its benefits, risks (to humans and animals), ethical concerns, principles of stabilization of sick and injured animals, and other key areas for consideration. Common presentations and underlying reasons for sick and injured animals that are admitted to a rehabilitation centre are presented. Whether in a wildlife centre or in the field, understanding important physiologic differences between species and how to stabilize animals for subsequent treatment by a permitted rehabilitator or a wildlife veterinarian are discussed.

1.3 Timetable

Timetable is subject to change. Please see WebAdvisor for the latest information.

1.4 Final Exam

Exam time and location is subject to change. Please see WebAdvisor for the latest information.

2 Instructional Support

Dr. Sherri Cox

Email: coxs@uoguelph.ca

Dr. Sherri Cox is an Assistant Professor in the College of Biological Science. She is also a wildlife veterinarian and the medical director of the National Wildlife Centre where she regularly provides diagnosis, treatment, and surgical intervention for thousands of sick and injured wildlife across Canada. Dr. Cox is Board Certified in Avian medicine and surgery. She has been helping sick, injured and orphaned wildlife for more than a decade. Dr. Cox also teaches chemical immobilization for the provincial authorities as well as delivers countless hours of lectures and workshops at various wildlife conferences around the world. She is a Board member on the National Wildlife Rehabilitators Association and is also an instructor for the International Wildlife Rehabilitation Council.

Office Hours via Zoom: Students can book online appointments by contacting the instructor. Students may opt to make an appointment to meet in person beginning on October 12 . Please note that further details will be posted in the **Announcements**. See also **Communicating with Your Instructor**.

3 Learning Resources

Required Textbook

Title: Wildlife Rehabilitation - A Comprehensive Approach 2nd edition

Author(s): IWRC Wildlife Rehabilitation Council

Edition / Year: 2nd edition

Publisher: The IWRC

ISBN: 9780997812657

You may purchase the textbook at the Guelph Campus Co-op Bookstore or the University of Guelph Bookstore. Please note that DE textbooks are located in the Distance Education section of the University of Guelph Bookstore.

<https://bookstore.coop>

<http://www.bookstore.uoguelph.ca/>

Supplementary Materials

This course includes supplementary materials. These materials are meant to supplement the required readings and course content. You can explore the materials at your own pace. To access these materials, select **Content** on the navbar to locate **Supplementary Materials** in the table of contents panel.

Course Website

CourseLink (powered by D2L's Brightspace) is the course website and will act as your classroom. It is recommended that you log in to your course website every day to check for announcements, access course materials, and review the weekly schedule and assignment requirements.

<https://courselink.uoguelph.ca>

Ares

For this course, you may be required to access course reserve materials through the University of Guelph McLaughlin Library. To access these items, select **Ares** on the navbar in CourseLink. Note that you will need your Central Login ID and password in order to access items on reserve.

For further instructions on accessing reserve resources, visit [How to Get Course Reserve Materials](#).

If at any point during the course you have difficulty accessing reserve materials, please contact the e-Learning Operations and Reserve Services staff at:

Tel: 519-824-4120 ext. 53621

Email: libres2@uoguelph.ca

Location: McLaughlin Library, First Floor, University of Guelph

<https://www.lib.uoguelph.ca/find/course-reserves-ares>

4 Learning Outcomes

By the end of this course, you should be able to:

1. Demonstrate knowledge of the goals of wildlife rehabilitation and accurately interpret regulations and permits required to rehabilitate animals
2. Compare key anatomic and physiologic differences among mammals, birds, and

reptiles

3. Demonstrate knowledge of the ethical, animal welfare, and economic influences in wildlife rehabilitation
 4. Interpret ways whereby wildlife rehabilitation encompasses individual, population, and ecosystem health
 5. Accurately and effectively communicate common reasons that wildlife are admitted to rehabilitation centres
 6. Synthesize data to draw conclusions on how various species defend themselves and how to maximize human safety
 7. Discuss ways to mitigate the negative impacts on wildlife from various human-wildlife encounters
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5 Teaching and Learning Activities

Unit 01: An Introduction to the Field of Wildlife Rehabilitation: Considerations in Wildlife Rehabilitation Centres

Week 1 - Thursday, September 8 to Sunday, September 18

Readings

- Unit 01 Content (including unit Videos)

Activities

- Familiarize yourself with the course website by selecting **Start Here** on the navbar.
- Review **Outline** and **Assessments** on the course website to learn about course expectations, assessments, and due dates.
- Confirm your access to the course reserve materials by selecting **Ares** on

the navbar.

- Complete the **Practice Test** using Respondus through the **Quizzes** tool.
- Introductions (via Class Introductions discussion board) – to be completed by Sunday, September 18 at 11:59 PM
- Enhancing Practice
- Join the Welcome Session & Orientation to the Course with your Instructor – **Tuesday September 13th from 10:00am-11:00am**. A Zoom or Teams link will be shared in the Course Announcement page. Note: this is not mandatory, but it is highly encouraged you join the call if you are able.

Unit 02: Permits, Regulations, and Ethical Considerations in Wildlife Rehabilitation

Week 2 - Monday, September 19 to Sunday, September 25

Readings

- Unit 02 Content
- Wildlife Rehabilitation: A Comprehensive Approach, 2nd Edition. International Wildlife Rehabilitation Council. 2020. Pages 1-8.
- Standards for Wildlife Rehabilitation, 2021. National Wildlife Rehabilitators Association and International Wildlife Rehabilitation Council. Pages 19; 24-29; 348-364.

Activities

- Enhancing Practice

Assessments

- Week 2 Discussion to be completed by Sunday, September 25 at 11:59 PM

ET

Unit 03: Basic Comparative Anatomy and Physiology of Wildlife Commonly Presented to Wildlife Rehabilitation Centres

Week 3 – Monday, September 26 to Sunday, October 2

Readings

- Unit 03 Content
- Wildlife Rehabilitation: A Comprehensive Approach, 2nd Edition. International Wildlife Rehabilitation Council. 2020. Pages 31-35.

Activities

- Enhancing Practice

Assessments

- Quiz 1
 - Opens: Friday, September 30 at 8:00 AM ET

Closes: Sunday, October 2 at 11:59 PM ET

Note: You are encouraged to take Quizzes during CourseLink Support service hours.

Unit 04: Common Illnesses and Diseases of Wildlife Presented to Rehabilitation Centres – Part 1

Week 4 – Monday, October 3 to Sunday, October 9

Readings

- Unit 04 Content
- Wildlife Rehabilitation, A Comprehensive Approach. 2nd Edition. International Wildlife Rehabilitation Council. 2020. Pages 99-101, 106-113
- Buttke, D., Decker, D., Wild, M. 2015. The role of one health in wildlife conservation: A challenge and an opportunity. *Journal of Wildlife Diseases*, 51(1):1-8.
- Kelly, T., Madhavan, T., Madhavan, V., Peters, J., Kazacos, K., Silvera, V. 2012. Spinal cord involvement in a child with raccoon roundworm (*Baylisascaris procyonis*) meningoencephalitis. *Pediatric radiology*. 42., p. 372 (**review the diagram of the life cycle**)

Activities

- Enhancing Practice

Unit 05: Common Illnesses and Diseases of Wildlife Presented to Rehabilitation Centres – Part 2

Week 5 – Monday, October 10 to Sunday, October 16

Readings

- Unit 05 Content

- Factsheets:
 - Avian influenza
 - Canine Distemper
 - Rabies
 - Ranavirus
 - Snake Fungal Disease
 - Bat White Nose Syndrome
 - Winter Tick
 - Lead Poisoning

Activities

- Enhancing Practice

Assessments

- Quiz 2
 - Opens: Friday, October 14 at 8:00 AM ET

 - Closes: Sunday, October 16 at 11:59 PM ET

Unit 06: Natural History and High-Level Taxonomic Overview of Common Species Admitted to Wildlife Rehabilitation Centres in Canada

Week 6 – Monday, October 17 to Sunday, October 23

Readings

- Unit 06 Content

Activities

- Enhancing Practice

Assessments

- Week 6 Discussion to be completed by Sunday, October 23 at 11:59 PM ET
- Midterm
 - Opens: Thursday, October 20 at 8:00 AM ET

Closes: Friday, October 21 at 11:59 PM ET

Note: You are encouraged to take the Midterm during CourseLink Support service hours.

Unit 07: Perspectives from Field Experts: Black Bear Behaviour and Rehabilitation, and Turtle Conservation and Rehabilitation

Week 7 – Monday, October 24 to Sunday, October 30

Readings

- Unit 07 Content

Activities

- Enhancing Practice

Assessments

- Quiz 3
 - Opens: Friday, October 28 at 8:00 AM ET

Closes: Sunday, October 30 at 11:59 PM ET

Unit 08: Principles of Triage and Stabilization of Sick and Injured Wildlife

Week 8 – Monday, October 31 to Sunday, November 6

Readings

- Unit 08 Content
- Wildlife Rehabilitation, A Comprehensive Approach. 2nd Edition. International Wildlife Rehabilitation Council. 2020 Pages 116-122, 146-160, 173-178, 236-244.

Activities

- Enhancing Practice

Unit 09: Communicating with the Public and Tough Decision Making

Week 9 – Monday, November 7 to Sunday, November 13

Readings

- Unit 09 Content
- Wildlife Rehabilitation, A Comprehensive Approach. 2nd Edition. International Wildlife Rehabilitation Council. 2020 Pages 75-87, 135-145, 317-352.

Activities

- Enhancing Practice

Assessments

- Quiz 4
 - Opens: Friday, November 11 at 8:00 AM ET

Closes: Sunday, November 13 at 11:59 PM ET

Unit 10: Wildlife Nutrition Considerations in Wildlife Rehabilitation Centres

Week 10 – Monday, November 14 to Sunday, November 20

Readings

- Unit 10 Content
- Wildlife Rehabilitation, A Comprehensive Approach. 2nd Edition. International Wildlife Rehabilitation Council. 2020 Pages 80-87, 181-191, 199-211
- Principles of Wildlife Rehabilitation: Raising Orphaned Mammals. 8.9-8.64, 9.1-9.52
- The following readings relate to Unit 11 content; however, you will need

some of this information to complete your assignment. Therefore, these readings have been listed in week 10.

- In addition to Unit 11 Course Content, the following are required reading:
- Wildlife Rehabilitation, A Comprehensive Approach. 2nd Edition. International Wildlife Rehabilitation Council. 2020 Pages 88-97, 99-101, 106-113 (note-this last section was required in Unit 4)
- Standards for Wildlife Rehabilitation, 2021. National Wildlife Rehabilitators Association and International Wildlife Rehabilitation Council. Pages 98-127; 132-155; 166-182; 194-225; 234; 239-259
- NWRA Principles of Wildlife Rehabilitation Pages: 6.35-6.40

Activities

- Enhancing Practice

Assessments

- Week 10 Discussion to be completed by Sunday, November 20 at 11:59 PM ET

Unit 11: Handling, Restraint, and Husbandry Practices in Wildlife Rehabilitation

Week 11 – Monday, November 21 to Sunday, November 27

Readings

- Unit 11 Content

Activities

- Enhancing Practice

Assessments

- Presentation and Report - Presentation component is due (Final report is due in week 12)
 - Group to Presentation (Power Point file) to the Presentation and Report discussion board by Tuesday, November 22 at 11:59 PM ET
 - Group Discussion to be completed by Sunday, November 27 at 11:59 PM ET

Unit 12: Wild Animal Welfare, Human-Wildlife Interactions and Disposition of Wildlife

Week 12 – Monday, November 28 to Friday, December 2

Readings

- Unit 12 Content
- Wildlife Rehabilitation, A Comprehensive Approach. 2nd Edition. International Wildlife Rehabilitation Council. 2020 Pages 13-27; 288-314; 318-336 (note – some of these readings were required in Unit 9 so they should look familiar).
- Standards for Wildlife Rehabilitation, NWRA, IWRC. 2021. Pages 31-38
- Beckmann, J. 2010. Safe Passages: Highways, Wildlife, and Habitat Connectivity. Washington, DC: Island Press. Pages 3-16; 33; 37-44.

Activities

- Enhancing Practice

Assessments

- Quiz 5
 - Opens: Wednesday, November 30 at 8:00 AM ET
 - Closes: Friday, December 2 at 11:59 PM ET
- Presentation and Report - Report component of this exercise (Re-submission of presentation is not necessary)
 - Groups to submit their final Report to the appropriate Dropbox by Friday, December 2 at 11:59 PM

6 Assessments

Assessments

The grade determination for this course is indicated in the following table. A brief description of each assessment is provided below. Select **Content** on the navbar to locate **Assessments** in the table of contents panel to review further details of each assessment. Due dates can be found under the Schedule heading of this outline.

Table 1: Course Assessments

Assessment Item	Weight	Learning Outcomes
Online Quizzes (5 at 2% each)	10%	1-5
Online Discussion Participation (3 Unit Discussion exercises at 3% each)	9%	
Note: Unit 02, Unit 06, and Unit 10		
Presentation and Report	21%	1-7

Assessment Item	Weight	Learning Outcomes
Participation in Presentation, Report Preparation & Presentation Discussion	10%	1-7
Midterm Exam	15%	1 ,2, 3, 5
Final Exam	35%	1-7
Total	100%	

Assessment Descriptions

Online Exercises - Weekly Quizzes

There are five online quizzes that test your comprehensive of the content covered in this course. Each quiz covers specific content from the course, including unit content, textbook readings, and resources available through Ares.

This course requires the use of Respondus LockDown Browser to proctor your online quizzes within CourseLink. Use of Lockdown Browser has been implemented to maintain the academic integrity of the quizzes. You must download and install LockDown Browser to complete the practice test and quizzes.

Online Exercises - Discussion Participation

An important aspect of the learning experience in this course is the online discussions which require you to respond to different topic questions. This experience provides you with the opportunity to share the knowledge you gained in the course and to engage in a dialogue with your classmates. There are specific discussion questions to respond to for three of the units of the course: Units 02, 06,

and 10. Refer to the Assessments section in CourseLink for further information.

Presentation and Report

This assessment is designed to help you explore one course-related topic in-depth; gather academic, peer-reviewed sources related to this topic; and write a paper that analyzes and synthesizes the rehabilitation aspects of this particular case. While some groups may opt for humane euthanasia as a recommendation, you must proceed (for this assignment) as if you are going to rehabilitate the animal.

Individual, active participation in presentation and report preparation is required to obtain the participation mark. Similar to the discussion rubric, students are expected to post early, multiple times, contribute meaningful content, and respond thoughtfully to peers' feedback and contributions to the assignment. Assessment of the participation mark will be based on instructor and peer feedback. See assessment section of CourseLink for additional information. The CourseLink Discussion Board must be used for discussion within your group, and instructors will review postings on the CourseLink site for assessment purposes.

Midterm Exam

To ensure understanding of the content covered in this course, the midterm examination is an opportunity for you to demonstrate your understanding and progression of the course for the first 5 units. The Midterm Exam will be completed online. This is a closed-book exam and you may not use any notes or other references to answer the questions.

This course requires the use of Respondus LockDown Browser to proctor your online midterm within CourseLink. Use of Lockdown Browser has been implemented to maintain the academic integrity of the final exam. You must download and install LockDown Browser to complete the practice test and midterm exam.

Final Exam

This course requires the use of Respondus LockDown Browser to proctor your online midterm within CourseLink. Use of Lockdown Browser has been implemented to maintain the academic integrity of the final exam. You must download and install LockDown Browser to complete the practice test and midterm exam.

The exam is cumulative and covers material from the entire term. Online content required readings and any other course material is all testable. The exam will include a mix of true/false questions, multiple choice questions and short answer questions. Review the learning objectives for each unit, as well as self-assessment and stop and think activities for examples of the sorts of questions you may be asked. Also see the Course Home page for more details in Week 12. The final exam is mandatory and will be administered online, using Respondus LockDown browser. The final exam date is TBD.

7 Department of Integrative Biology Statements

7.1 Academic Advisors

If you are concerned about any aspect of your academic program:

- Make an appointment with a program counsellor in your degree program. [B.Sc. Academic Advising](#) or [Program Counsellors](#)

7.2 Academic Support

If you are struggling to succeed academically:

- Learning Commons: There are numerous academic resources offered by the Learning Commons including, Supported Learning Groups for a variety of courses, workshops related to time management, taking multiple choice exams, and general study skills. You can also set up individualized appointments with a learning specialist. <http://www.learningcommons.uoguelph.ca/>
- Science Commons: Located in the library, the Science Commons provides support for physics, mathematic/statistics, and chemistry. Details on their hours of operations can be found at: <http://www.lib.uoguelph.ca/get-assistance/studying/chemistry-physics-help> and <http://www.lib.uoguelph.ca/get-assistance/studying/math-stats-help>

7.3 Wellness

If you are struggling with personal or health issues:

- Counselling services offers individualized appointments to help students work through personal struggles that may be impacting their academic performance. <https://www.uoguelph.ca/counselling/>
- Student Health Services is located on campus and is available to provide medical attention. <https://www.uoguelph.ca/studenthealthservices/clinic>
- For support related to stress and anxiety, besides Health Services and Counselling Services, Kathy Somers runs training workshops and one-on-one sessions related to stress management and high performance situations. <http://www.selfregulationskills.ca/>

7.4 Personal information

Personal information is collected under the authority of the University of Guelph Act (1964), and in accordance with Ontario's Freedom of Information and Protection of Privacy Act (FIPPA) <http://www.e-laws.gov.on.ca/index.html>. This information is used by University officials in order to carry out their authorized academic and administrative responsibilities and also to establish a relationship for alumni and development purposes.

For more information regarding the Collection, Use and Disclosure of Personal Information policies please see the Undergraduate Calendar. (<https://www.uoguelph.ca/registrar/calendars/undergraduate/current/intro/index.shtml>)

7.5 Course Offering Information Disclaimer

Please note that course delivery format (face-to-face vs online) is subject to change up to the first-class day depending on requirements placed on the University and its employees by public health bodies, and local, provincial and federal governments. Any changes to course format prior to the first class will be posted on WebAdvisor/Student Planning as they become available.

8 University Statements

8.1 Email Communication

As per university regulations, all students are required to check their e-mail account regularly: e-mail is the official route of communication between the University and its students.

8.2 When You Cannot Meet a Course Requirement

When you find yourself unable to meet an in-course requirement because of illness or compassionate reasons please advise the course instructor (or designated person, such as a teaching assistant) in writing, with your name, id#, and e-mail contact. The grounds for Academic Consideration are detailed in the Undergraduate and Graduate Calendars.

Undergraduate Calendar - Academic Consideration and Appeals

<https://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-ac.shtml>

Graduate Calendar - Grounds for Academic Consideration

<https://www.uoguelph.ca/registrar/calendars/graduate/current/genreg/index.shtml>

Associate Diploma Calendar - Academic Consideration, Appeals and Petitions

<https://www.uoguelph.ca/registrar/calendars/diploma/current/index.shtml>

8.3 Drop Date

Students will have until the last day of classes to drop courses without academic penalty. The deadline to drop two-semester courses will be the last day of classes in the second semester. This applies to all students (undergraduate, graduate and diploma) except for Doctor of Veterinary Medicine and Associate Diploma in Veterinary Technology (conventional and alternative delivery) students. The regulations and procedures for course registration are available in their respective Academic Calendars.

Undergraduate Calendar - Dropping Courses

<https://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-drop.shtml>

Graduate Calendar - Registration Changes

<https://www.uoguelph.ca/registrar/calendars/graduate/current/genreg/genreg-reg-regchg.shtml>

Associate Diploma Calendar - Dropping Courses

<https://www.uoguelph.ca/registrar/calendars/diploma/current/c08/c08-drop.shtml>

8.4 Copies of Out-of-class Assignments

Keep paper and/or other reliable back-up copies of all out-of-class assignments: you may be asked to resubmit work at any time.

8.5 Accessibility

The University promotes the full participation of students who experience disabilities in their academic programs. To that end, the provision of academic accommodation is a shared responsibility between the University and the student.

When accommodations are needed, the student is required to first register with Student Accessibility Services (SAS). Documentation to substantiate the existence of a disability is required; however, interim accommodations may be possible while that process is underway.

Accommodations are available for both permanent and temporary disabilities. It should be noted that common illnesses such as a cold or the flu do not constitute a disability.

Use of the SAS Exam Centre requires students to make a booking at least 14 days in advance, and no later than November 1 (fall), March 1 (winter) or July 1 (summer). Similarly, new or changed accommodations for online quizzes, tests and exams must be approved at least a week ahead of time.

For Guelph students, information can be found on the SAS website
<https://www.uoguelph.ca/sas>

For Ridgetown students, information can be found on the Ridgetown SAS website
<https://www.ridgetownc.com/services/accessibilityservices.cfm>

8.6 Academic Integrity

The University of Guelph is committed to upholding the highest standards of academic integrity, and it is the responsibility of all members of the University community-faculty, staff, and students-to be aware of what constitutes academic misconduct and to do as much as possible to prevent academic offences from occurring. University of Guelph students have the responsibility of abiding by the University's policy on academic misconduct regardless of their location of study; faculty, staff, and students have the responsibility of supporting an environment that encourages academic integrity. Students need to remain aware that instructors have access to and the right to use electronic and other means of detection.

Please note: Whether or not a student intended to commit academic misconduct is not relevant for a finding of guilt. Hurried or careless submission of assignments does not excuse students from responsibility for verifying the academic integrity of their work before submitting it. Students who are in any doubt as to whether an action on their part could be construed as an academic offence should consult with a faculty member or faculty advisor.

Undergraduate Calendar - Academic Misconduct
<https://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-amisconduct.shtml>

Graduate Calendar - Academic Misconduct
<https://www.uoguelph.ca/registrar/calendars/graduate/current/genreg/index.shtml>

8.7 Recording of Materials

Presentations that are made in relation to course work - including lectures - cannot be recorded or copied without the permission of the presenter, whether the instructor, a student, or guest lecturer. Material recorded with permission is restricted to use for that course unless further permission is granted.

8.8 Resources

The Academic Calendars are the source of information about the University of Guelph's procedures, policies, and regulations that apply to undergraduate, graduate, and diploma programs.

Academic Calendars
<https://www.uoguelph.ca/academics/calendars>

8.9 Disclaimer

Please note that the ongoing COVID-19 pandemic may necessitate a revision of the format of course offerings, changes in classroom protocols, and academic schedules. Any such changes will be announced via CourseLink and/or class email.

This includes on-campus scheduling during the semester, mid-terms and final examination schedules. All University-wide decisions will be posted on the COVID-19 website (<https://news.uoguelph.ca/2019-novel-coronavirus-information/>) and circulated by email.

8.10 Illness

Medical notes will not normally be required for singular instances of academic consideration, although students may be required to provide supporting documentation for multiple missed assessments or when involving a large part of a course (e.g.. final exam or major assignment).

8.11 Covid-19 Safety Protocols

For information on current safety protocols, follow these links:

- <https://news.uoguelph.ca/return-to-campus/how-u-of-g-is-preparing-for-your-safe-return/>
- <https://news.uoguelph.ca/return-to-campus/spaces/#ClassroomSpaces>

Please note, these guidelines may be updated as required in response to evolving University, Public Health or government directives.
