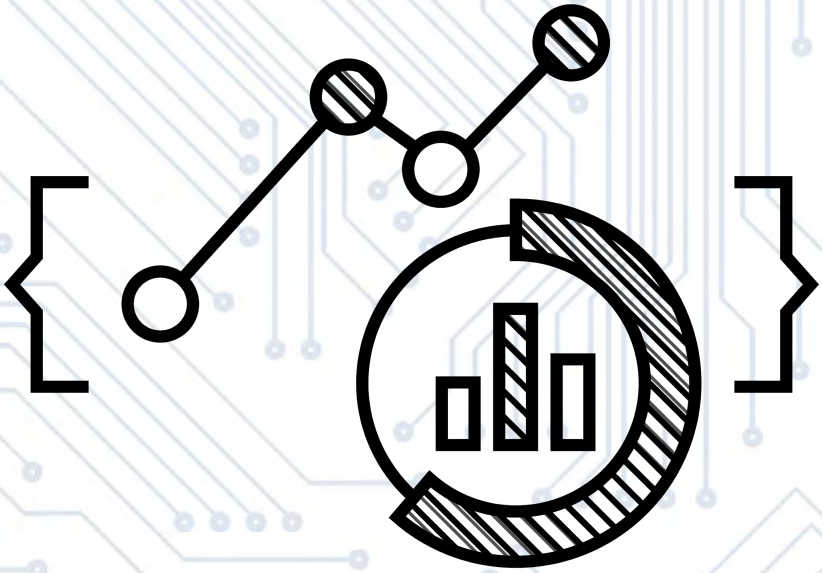
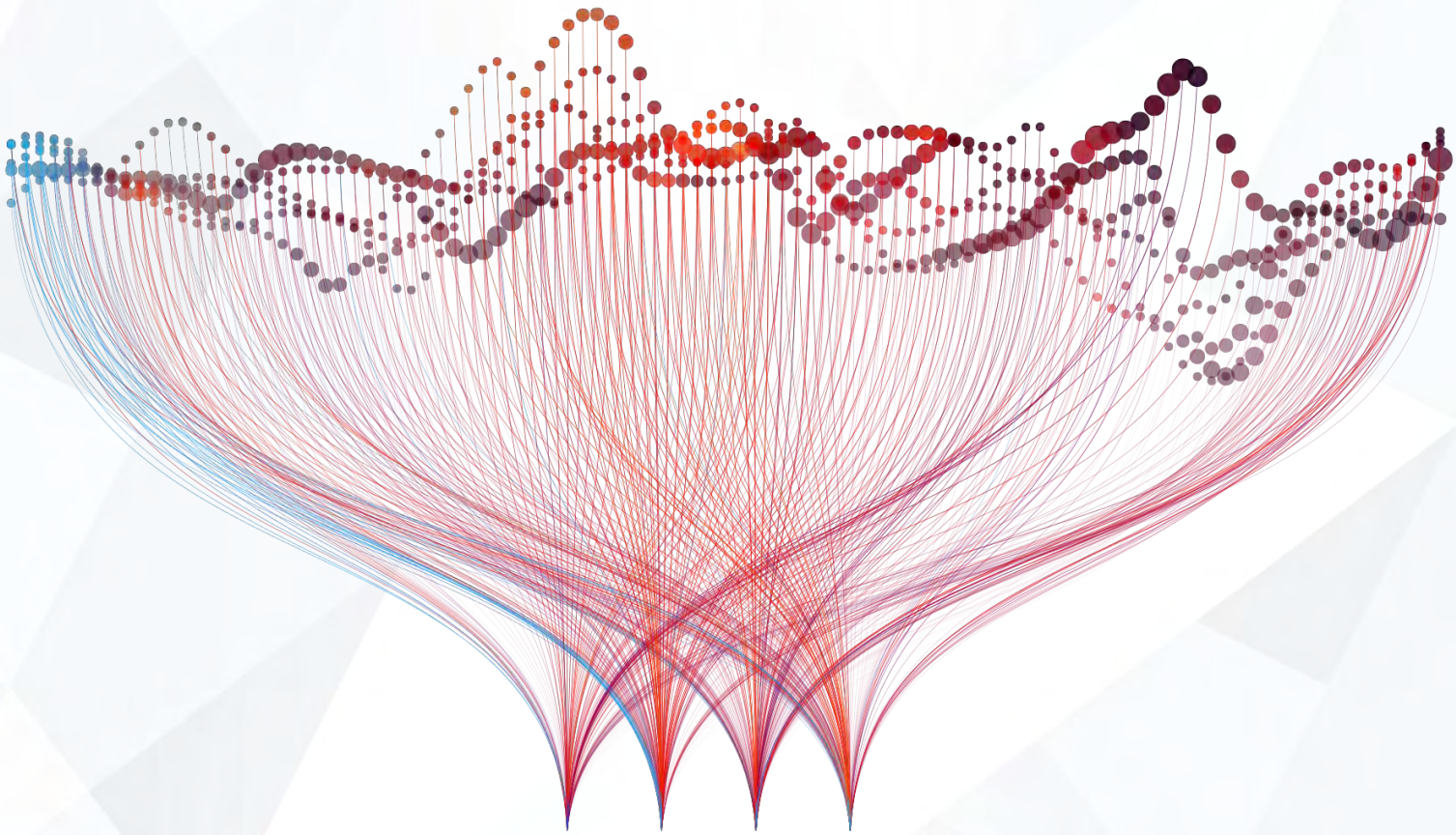


Online Data Analytics Boot Camp
Syllabus

Online Data Analytics Boot Camp Syllabus

SECTION 1 Course Overview

Welcome to Online Data Analytics! This is a rigorous and fast-paced boot camp that focuses on the practical technical skills needed to solve data problems. Throughout the course, you will gain proficiency in numerous marketable technologies, including Excel, Python, JavaScript, SQL Databases, Tableau, and more. Additionally, you will leave with an impressive professional portfolio and the confidence to succeed in a data-driven economy.



Course Overview

Course Outcomes

By the time you graduate, you will be able to:

- Employ statistical analysis to model, predict, and forecast trends.
- Build VBA scripts in Excel to automate tedious manual processes.
- Use real-world data sources to showcase social, financial, and political phenomena.
- Create Python-based scripts to automate the clean up, restructuring, and rendering of large, heterogeneous datasets.
- Interact with RESTful APIs using Python Requests and JSON parsing techniques.
- Generate in-depth graphs, charts, and tables using a wide variety of data-driven programming languages and libraries.
- Use geographic data to create visually exciting, interactive, and informative maps.
- Build custom interactive data visualizations using JavaScript libraries.
- Write SQL commands to perform, create, read, update, and delete (CRUD) operations.
- Use advanced SQL and Mongo techniques to combine multiple datasets into more comprehensive databases.
- Create basic interactive websites and applications to showcase your work to outside audiences.
- Construct web applications and visual datasets with a variety of charts.
- Scrape information from webpages in order to collect data from a broad range of online sources.
- Glean and communicate new business insights using enterprise-grade tools like Tableau.

Course Overview

Curriculum

You will begin by learning the core fundamentals of Excel and then move to more complex concepts like machine learning. The course is broken into six units organized into weekly modules. In the last five weeks of the course, you will work with a group to create an innovative portfolio project.

Unit	Description	What You'll Learn
Unit 1: **Excel Crash Course** *(Modules 1–2)*	Enhance your Microsoft Excel skills. In this unit, we'll cover advanced topics like statistical modelling, forecasting and prediction, pivot tables, and VBA scripting. We'll also learn to model historic stock trends—and, hopefully, anticipate how to beat the market!	• Microsoft Excel • VBA Scripting • Statistics Modelling
Unit 2: **Python Data Analytics** *(Modules 3–6)*	Gain a strong foothold in one of today's fundamental programming languages. In this unit, you'll gain deep proficiencies in core Python and data analytic tools like NumPy, Pandas, and Matplotlib.	• Python • APIs • JSON • NumPy • Pandas • Matplotlib • Beautiful Soup
Unit 3: **Databases** *(Modules 7–9)*	Dive deep into the most prolific database languages: SQL and NoSQL. Work with Postgres/pgAdmin and MongoDB to organize data into well-structured and easily retrievable formats.	• SQL • NoSQL • Postgres/pgAdmin • MongoDB
Unit 4: **Visualization** *(Modules 10–15)*	Communicate effectively with visualizations. In this unit, you'll learn the core technologies of web development (HTML, CSS, and JavaScript) to create new, interactive data visualizations that you can share on the web.	• HTML • CSS • JavaScript • Leaflet
Unit 5: **Advanced Topics** *(Modules 16–19)*	Take your knowledge even further. By the end of the course, you'll immerse in new, in-demand topics like Tableau, Hadoop, and machine learning.	• Tableau • Hadoop • Machine Learning
Unit 6: **Final Project** *(Modules 20–24)*	Bring it all together. For the final project, you'll create an impressive data visualization application with a small team. Get creative and come up with an innovative tool to show off to the world!	• Dreaming up something fantastic • Understanding the bounds of reasonable and achievable

SECTION 2

Course Structure

Learning Experience

Each week of your course is structured around a specific topic and set of skills. The course is designed to help you master those skills. Each week you will:

1. **Complete Online Lessons**

   Start each week by diving into the online lessons on Bootcamp Spot. The lessons are designed to introduce you to the week's skills within a real-world context through videos, text-based readings, skill-based activities, and interactive activities. Expect to take around 10–15 hours to complete one week of material.

2. **Attend Virtual Classes & Office Hours**

   You will have two virtual classes (one required, one optional), plus a number of TA-led Office Hour sessions available to you each week through Zoom. Instructor-led virtual classes are designed to build on the online lessons, so be sure that you have made good progress on the lessons to get the most out of these classes. TA Office Hours are designed to let you ask questions and get extra help on the weekly material.

3. **Submit Weekly Challenges**

   Cap the week off by demonstrating the skills you learned. The Challenge assignment should take around 5–10 hours each week. This is a graded assignment.

Course Structure

Course Schedule

Modules typically span one week. During Winter Break, however, you will have an extra week to complete modules. Schedules for optional and required virtual classes may be adjusted for standard Ontario holidays. The support team will not be available on these days. Refer to the calendar in your online course space (Bootcamp Spot) for alternative scheduling of these sessions.

Holiday List
New Year's Day
Family Day
Good Friday
Victoria Day
Canada Day
Simcoe Day
Labour Day
Thanksgiving
Christmas
Winter Break (December 26–31)

Course Structure

Introduction to Course Technology

Our program incorporates cutting-edge technologies for learning and data professionals, including:

Bootcamp Spot 	Our learning environment Bootcamp Spot is built on the leading cloud-based Canvas Learning Management System. This is your main hub for all course curriculum and assignments.
Slack 	Slack, the popular business collaboration tool, is our core learning community space. On Slack, you will communicate with peers and instructional staff to celebrate victories and troubleshoot challenges. You can access Slack through your web browser or install the app on your computer and/or mobile device.
Zoom 	Zoom is where we hold all virtual classes. This video conferencing software allows us to connect in real-time with video, audio, screen sharing, and chat. You will access Zoom directly through the course. Be sure to have your headset with mic and webcam ready. We also highly recommend having a second monitor during these sessions so that you can practice coding as you interact with your classmates.

You will use a suite of data tools, technologies, and languages in the curriculum, including Microsoft Excel, Python, GitHub, R, Tableau, and JavaScript.

Course Structure

Minimum Technology Requirements

To successfully use the tools and technologies required in this course, you need the right equipment.

Here's what you need to get started:	Here's what you'll need before your first virtual session:
Laptop with Mac or Windows operating system (Note that you cannot use Linux in this course.)	Webcam
8 GB RAM and 64-bit dual processor	Headphones with a microphone
High-speed internet connection (We recommend a download speed of at least 25 Mbps and an upload speed of at least 5 Mbps.)	An external monitor that is compatible with your laptop (highly recommended for Zoom sessions)

Course Structure

Surveys and Data

We believe in continually improving our program, whether it's building in more targeted practice to support your learning, adding new content to address the evolving needs of a dynamic industry, or providing your instructor with innovative ideas to tailor the experience for your class. For this reason, we ask for your feedback at the end of each module, at the course midpoint, and at the end of the program. We appreciate your honest responses.

SECTION 3 Course Assessment & Requirements

Assessment Criteria

This boot camp is designed around weekly graded deliverables in order to give you regular, direct feedback. For each assignment, you will receive numerical and letter grades as shown in the following table. You will receive an Incomplete for assignments that do not meet the baseline requirements. All assignments that do not receive Incompletes, count toward graduation requirements.

A+	98–100	C+	78–79
A	93–97	C	72–77
A–	90–92	C–	70–72
B+	88–89	D+	68–69
B	82–87	D	62–67
B–	80–82	D–	60–62
		F	< 60
		I	Incomplete

Course Assessment & Requirements

Assessment Criteria

You will receive an overall grade for the course based on the following:

Assessment	Description	Number	% of Final Grade
Challenge Assignments	Weekly individual assignments. You will receive rubric-based feedback and the lowest two grades will be discarded.	19	60%
Unit Assessments	Assessment at the end of each unit to evaluate your knowledge of key concepts.	5	10%
Final Project	Final project at the end of the course. Working in a small group, you will select, develop, and present a project that demonstrates the skills you learned.	1	30%

Course Assessment & Requirements

Attendance Requirements

There are two real-time virtual classes via Zoom each week.

Virtual Class (Recommended)	This optional session occurs early in the week. Though it is optional, we highly recommend attending for optimal success in the course. Aim to have started the weekly lessons before attending to make the most of the class.
	During this time, your instructor will answer questions and lead activities intended to help deepen your understanding of the content covered in the online lessons. Aim to have completed at least 50% of the weekly lessons before attending to make the most of the class.
Virtual Class (Required)	This required session occurs late in the week. You can miss **up to four** required virtual classes and still graduate. If you miss a session, you are required to view the recording (available in the course).
	During this time, your instructor will lead interactive activities intended to build upon the content covered in the online lessons.

Course Assessment & Requirements

Graduation Requirements

Graduates of the program will receive a certificate of completion from the university. In order to graduate from this course and receive your certificate, you must:

01 Complete all online modules.

02 Miss no more than four required virtual classes (via Zoom).

03 Complete all quizzes.

04 Miss no more than two challenge assignments.

05 Complete the final project.

SECTION 4 Support

Your Support Community

We believe that a robust support team is essential to helping you achieve success in the program. Below are the core members of your team:

Instructors	The instructor is the lead facilitator for your learning experience. Your instructor will manage all virtual classes and office hours, guide the TA team, and monitor your progress.
Teaching Assistants (TAs)	TAs provide support and guidance, as well as critical feedback and evaluations on your submissions. TAs attend virtual classes, helping troubleshoot issues and lead small breakout groups. TAs also provide additional office hour sessions on Zoom throughout the week.
Program Support Manager	Your PSM oversees your classroom experience and assists you with any non-curriculum needs.
Learning Assistants	The Learning Assistant team is available to answer quick coding & concept questions via Slack outside of class hours. Simply use the /ask command in the learning-assistant Slack channel to get your question answered.
Tutor Network	If you need additional help to get back on track, your PSM can arrange 1:1 tutoring support.
Your Peers	You'll chat with other students, ask for help, and assist others in class and Slack, and in live meetups.
Career Services	Your Career Director and Profile Coach will support you in becoming employer competitive. Career Services is an optional service available throughout the course and up to six months after graduation.

Support

Slack Support

Slack is a community space where you can converse with classmates and ask TAs questions. The TA team will publish a calendar in Slack with hours for asynchronous remote support, a daily block of time in which TAs will review questions and help troubleshoot priority issues. We encourage you to follow the Read-Search-Ask method. If you get stuck, start by thoroughly reading the course content, then search for answers online (ask your instructional team for tips on places to search), and finally, ask your question in Slack if you are still stuck. Remember, the goal of the program is to train you how to think like a data-driven professional that has to find answers quickly in the workplace.

Your Program Success Manager (PSM)

Your program success manager is your person-of-contact for any questions about the course structure, delivery, or policies. If you don't know where to go, who to ask, or what to do, ask your PSM!

Your PSM is available during standard business hours, and can be contacted through the channels available in the Help menu in your course.

Support

How to Be Successful

We're excited that you've committed to the Data Analytics Boot Camp. It may be difficult at points, and you may doubt your abilities. However, we know that you can succeed and we have a strong support network in place to help you make that happen. With your dedication and our support, you will have the tools you need to thrive.

Tips for success:

- Create a schedule at the beginning of the course. Identify a safe, quiet place to work and discuss your plans with family and friends to ensure you get the support you need to be successful.
- Start the online lessons over weekends to give you ample time. Some weeks may be harder than others depending on the topics covered. It helps to know what to expect early.
- Aim to complete at least 50% of the online-lesson material before the required virtual class to ensure you are ready to participate.
- Attend as many Office Hour sessions throughout the week as you can.
- Use the /ask command in Slack to ask specific questions of our learning assistants during supported hours.

Support

How to Be Successful (continued)

- Make sure you have all technology and computer requirements set up before the course begins.
- Celebrate your wins and those of your peers. If you're feeling proud of a creation or a hurdle you've overcome, share it in Slack!
- Make connections. We encourage you to help your peers and ask for their help as needed. You may want to consider setting up a study group.
- Sync your class calendar to your phone or web calendars so that your assignment and virtual session dates are always handy. Your learning environment contains an easy ical link.
- Connect with your program success manager (PSM) for any non-curriculum support. Your PSM is entirely dedicated to your success and can guide you with any support you need.
- Focus on the big picture—beyond the specific skills of the week. A key element of this boot camp is "learning how to learn." In other words, we want you to learn how to think like a data-driven professional. Required skills will change as technology changes, but the critical thinking techniques you learn in this course will help you evolve with the field.
- Remember that you are not alone, especially early on in the course. If you are struggling, it means that others are too. You are in this program because you can succeed.

SECTION 5

Expectations & Policies

Time Expectations

You should expect to spend around 20–30 hours a week working on your course; though, the actual amount of time you spend will depend on a number of factors, including your pace, difficulty of the week, and attendance at optional sessions. In general, online lessons should take an average of 10–15 hours a week and the weekly challenge should take 5–10 hours a week. You will want to track yourself early in the course to identify how long you spend on each section and adjust expectations accordingly.

Late Assignment Policy

All weekly challenge assignments are due at 11:59 PM Eastern time on Sundays. It's important that you follow these deadlines to stay on target and receive timely feedback. The program moves fast so you will find it very difficult to catch up if you fall behind. You may skip two challenges if you wish. In those cases, simply "submit" the assignment as a statement that you are skipping it. You must submit all work by the last day of the course.

Prerequisites

There are no prerequisites for the course. However, you must have fundamental computer skills, be comfortable using the internet, and we recommend that you have some basic experience with Excel and feel comfortable working with quantitative information.

This course covers coding skills commonly used in data fields. You are not required to have any coding experience, but should be ready to learn how coding languages work.

Expectations & Policies

Communication Guidelines

At times, a boot camp can be stressful as you fight to crack the code of emerging skills. Therefore, it's important to be mindful of the needs of your peers and support teams and be courteous in how you communicate. This is especially true in online communication spaces such as email or Slack, where it's easy to misinterpret comments. Consider the following communication guidelines:

- Use encouraging, supportive tones when interacting with peers.
- Try to help peers who are stuck on a topic.
- Take opportunities to thank your support team for their help.
- Avoid yelling, sarcasm, and abusive language directed at peers or support team members.
- Be clear and specific in all of your help requests. Include screenshots and locations for content troublespots so that your TAs and peers can assist efficiently.
- Note the times that TAs are available to answer questions in Slack and consider their bandwidth.

Expectations & Policies

Code of Conduct / Academic Honesty

You are expected to work independently on all of your assignments and quizzes and submit your own work. Any violations of the university's academic honesty policy may result in your removal from the program. Please consult with your program success manager if you have any questions about the university's policy.

Drop Policy

In the event you are not able to take the course, you can drop within the timeframe outlined in your enrollment agreement and receive a refund of your balance paid. After the first full week, you are required to fulfill your tuition payments regardless of your status in the course.

If you wish to drop, you must contact your PSM.

Tutoring Policy

We offer tutoring for students who need additional support through one-on-one, 50-minute remote online sessions. While this service is included with tuition, you must be in good standing with class attendance, payment, and assignment submissions to qualify for tutoring. Students are granted one session per week during the course. You cannot accrue additional sessions nor can they be held after the graduation date.

Failure to show up for a scheduled tutoring session will result in ineligibility for future tutoring. Cancellations for a tutoring session must be made at least six hours prior to the call.

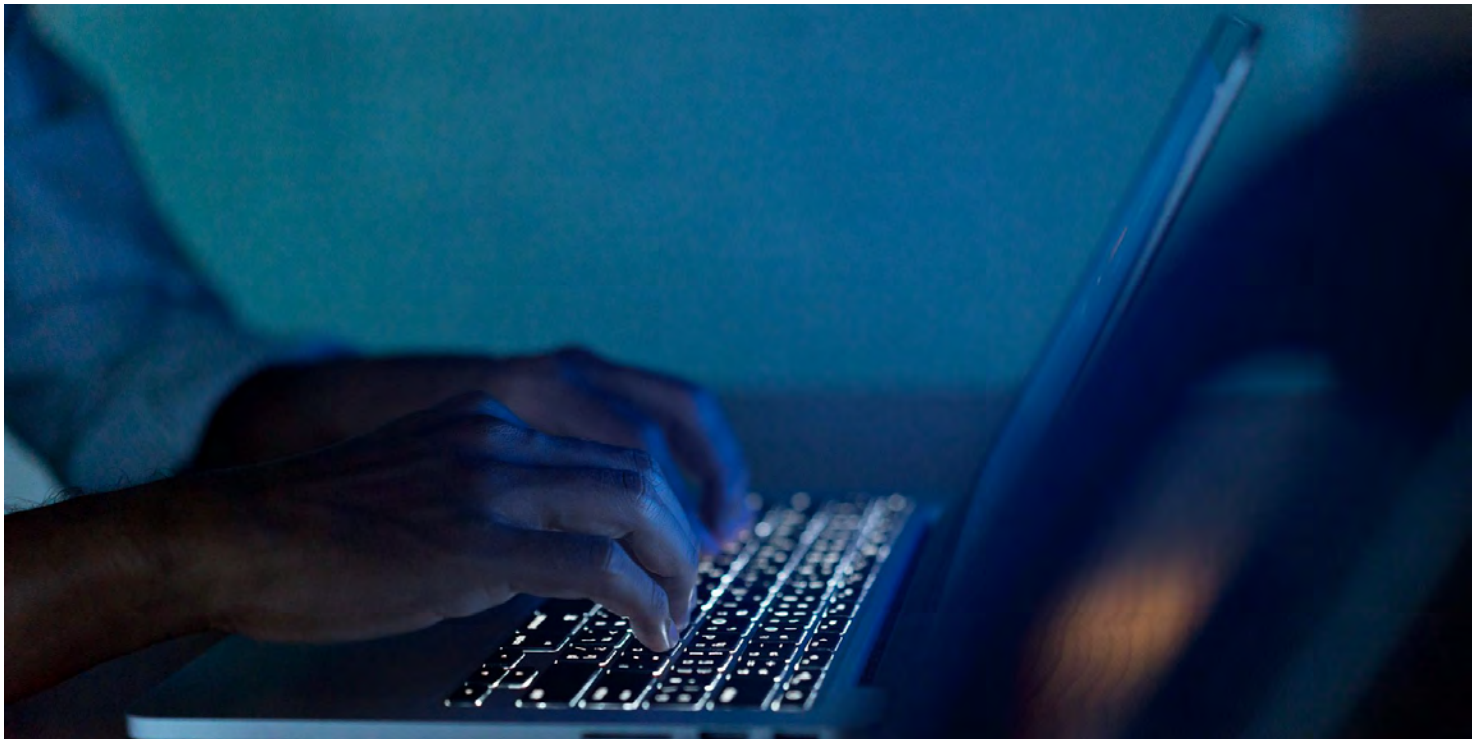
Career Services Policy

Career Services strives to help you become employer competitive. They offer support via a profile coach, career director, in-person demo days, and online workshops and events.

Students have access to 1:1 career coaching with their career director from the first day of class until 90 days after graduation.

The profile coach will respond within 96 business hours and your career director will respond within 24 business hours.

Expectations & Policies



Accessibility & Privacy Policies

Our program is designed to make learning accessible to all students. We optimize content for screen readers and use captioning on videos, and our technology and course design meets WCAG 2.0 standards. If you require additional assistance, please reach out to your PSM.

The following links display the accessibility policies for technology used in the course:

- Canvas
- Slack
- Zoom
- Learnosity

The following links display privacy policies for technology used in the course:

- Canvas
- Slack
- Zoom
- Learnosity