

# Course Schedule

**IMPORTANT: ALL TIMES EASTERN** - Please see the [University Policies](#) section of your Syllabus for details.



Week	Module	Readings	Activities and Assignments	Begin Date	End/Due Date	Weight (%)
Week 1	<a href="#">Module 01</a> : Introduction and Basic Concepts	Textbook: (Heiman, 2014)  • Chapters 1 and 2	Groups for Assignment 1 created by Tech Support		Check after Friday, January 15, 2021 at 4:30 PM	
			<a href="#">Module 00 Math Skill Practice</a> (Möbius)			2% (The highest 10 of 11 Möbius exercises will be counted towards your final grade.)
			<a href="#">SDS 250R Student Survey</a> (LEARN)		Monday, January 18, 2021 at 4:00 PM	2% (The highest 10 of 12 Möbius quizzes, including the LEARN survey, will be counted towards your final grade.)
			<a href="#">Quiz 0: Basic Math Skills</a> (Möbius)		Monday, January 18, 2021 at 4:00 PM	2%
Week 2	<a href="#">Module 02</a> : Frequency of Distributions	Textbook: (Heiman, 2014)  • Chapter 2	<a href="#">Module 01 Review Exercises</a> (Möbius)			2%
			<a href="#">Quiz 1</a> (Möbius)		Monday, January 25, 2021 at 4:00 PM	2%
Week 3	<a href="#">Module 03</a> : Central Tendency and Variability	Textbook: (Heiman, 2014)  • Chapters 3 and 4	<a href="#">Assignment 1 Group Expectations Discussion</a> (LEARN)			
			<a href="#">Module 02 Review</a>			2%

			<a href="#">Exercises</a> (Möbius)			
			<a href="#">Quiz 2</a> (Möbius)		Monday, February 1, 2021 at 4:00 PM	<b>2%</b>
<b>Week 4</b>	<a href="#">Module 04:</a> z-Scores and Central Limit Theorem	Textbook: (Heiman, 2014)  • Chapter 5	<a href="#">Module 03</a> <a href="#">Review</a> <a href="#">Exercises</a> (Möbius)			<b>2%</b>
			<a href="#">Assignment 1</a> (LEARN)		Friday, February 5, 2021 at 4:00 PM	<b>5%</b>
			<a href="#">Quiz 3</a> (Möbius)		Monday, February 8, 2021 at 4:00 PM	<b>2%</b>
<b>Week 5</b>	<a href="#">Module 05:</a> The Correlation Coefficient	Textbook: (Heiman, 2014)  • Chapter 10-1, 10-2	Groups for Assignment 2 created by Tech Support		Check after Monday, February 8, 2021 at 4:30 PM	
			<a href="#">Online Midterm 1</a> (Möbius)	Monday, February 8, 2021 at 12:00 Noon	Tuesday, February 9, 2021 at 11:55 PM	<b>10%</b>
			<a href="#">Module 04</a> <a href="#">Review</a> <a href="#">Exercises</a> (Möbius)			<b>2%</b>
			<a href="#">Quiz 4</a> (Möbius)		Monday, February 22, 2021 at 4:00 PM	<b>2%</b>
<b>Reading Week (Saturday, February 13, 2021 to Sunday, February 21, 2021)</b>						
<b>Week 6</b>	<a href="#">Module 06:</a> Linear Regression	Textbook: (Heiman, 2014)  • Chapter 10-5,	<a href="#">Assignment 2</a> <a href="#">Group Expectations</a> <a href="#">Discussion</a> (LEARN)			


		10-6	<a href="#">Module 05 Review Exercises</a> (Möbius)			2%
			<a href="#">Quiz 5</a> (Möbius)		Monday, March 1, 2021 at 4:00 PM	2%
<b>Week 7</b>	<a href="#">Module 07:</a> Probability and Hypothesis Testing	Textbook: (Heiman, 2014)  • Chapters 6, 7, and 10-3, 10-4	<a href="#">Module 06 Review Exercises</a> (Möbius)			
			<a href="#">Assignment 2</a> (LEARN)		Friday, March 5, 2021 at 4:00 PM	5%
<b>Week 8</b>	Continue <a href="#">Module 07:</a> Probability and Hypothesis Testing	Textbook: (Heiman, 2014)  • Chapters 6, 7, and 10-3, 10-4	<a href="#">Module 06 Review Exercises</a> (Möbius)			2%
			<a href="#">Quiz 6</a> (Möbius)		<b>Wednesday,</b> March 17, 2021 at 4:00 PM	2%
<b>Study Days (Saturday, March 13, 2021 to Tuesday, March 16, 2021)</b>						
<b>Week 9</b>	<a href="#">Module 08:</a> <i>t</i> -Test and Confidence Intervals	Textbook: (Heiman, 2014)  • Chapter 8	<a href="#">Module 07 Review Exercises</a> (Möbius)			2%
			<a href="#">Quiz 7</a> (Möbius)		Monday, March 22, 2021 at 4:00 PM	2%
<b>Week 10</b>	<a href="#">Module 09:</a> <i>t</i> -Test with Two Samples	Textbook: (Heiman, 2014)  • Chapter 9	<a href="#">Online Midterm 2</a> (Möbius)	Monday, March 22, 2021 at 12:00 Noon	Tuesday, March 23, 2021 at 11:55 PM	10%
			<a href="#">Module 08 Review Exercises</a> (Möbius)			2%

Winter 2021		SDS 250R Online			University of Waterloo	
			<a href="#">Quiz 8</a> (Möbius)		Monday, March 29, 2021 at 4:00 PM	2%
<b>Week 11</b>	<a href="#">Module 10:</a> The One-Way Analysis of Variance (ANOVA)	Textbook: (Heiman, 2014)  • Chapter 11	<a href="#">Module 09</a> <a href="#">Review</a> <a href="#">Exercises</a> (Möbius)			2%
			<a href="#">Quiz 9</a> (Möbius)		Monday, April 5, 2021 at 4:00 PM	2%
<b>Week 12</b>	<a href="#">Module 11:</a> Chi Square and Other Nonparametric Procedures	Textbook: (Heiman, 2014)  • Chapter 13	<a href="#">Module 10</a> <a href="#">Review</a> <a href="#">Exercises</a> (Möbius)			2%
			<a href="#">Quiz 10</a> (Möbius)		Monday, April 12, 2021 at 4:00 PM	2%
<b>Final Examination</b>						<b>30%</b>

## Final Examination Arrangements and Schedule

Information about final exams can be found on the [Final Examination schedule](#)  page on the Registrar's website, and their [Important dates page](#)  outlines the final examination periods for this term and the following two terms.

## Official Grades and Course Access

Official Grades and Academic Standings are available through [Quest](#) .

Your access to this course will continue for the duration of the current term. You will not have access to this course once the next term begins.



## Contact Information

## Announcements

Your instructor uses the **Announcements** widget on the **Course Home** page to make announcements during the term to communicate new or changing information regarding due dates, instructor absence, etc., as needed. You are expected to read the **Announcements** on a regular basis.

To ensure you are viewing the complete list of announcements, you may need to click **Show All Announcements**.

## Contact Us

Who and Why	Contact Details
<p><b>Instructor</b></p> <ul style="list-style-type: none"> <li>• Course-related questions (e.g., course content, deadlines, assignments, etc.)</li> <li>• Questions of a personal nature</li> </ul>	<p><b>Post your course-related questions</b> (statistics, questions, deadlines, etc) to the <a href="#">Ask the Instructor</a> discussion topic*. This allows other students to benefit from your question as well.</p> <p><b>Questions of a personal nature</b> can be directed to your instructor.</p> <p>Instructor: Andriy Struk  <a href="mailto:astruk@uwaterloo.ca">astruk@uwaterloo.ca</a></p> <p>Your instructor checks email and the <a href="#">Ask the Instructor</a> discussion topic* frequently and will make every effort to reply to your questions within 24–48 hours, Monday to Friday.</p>
<p><b>Teacher Assistants</b></p> <ul style="list-style-type: none"> <li>• Questions regarding course materials</li> </ul>	<p><b>Post your course-related questions</b> (statistics, questions etc.) to the <a href="#">Ask the Instructor</a> discussion topic*. This allows other students to benefit from your question as well.</p> <p>TA: Sarah Leo  <a href="mailto:snleo@uwaterloo.ca">snleo@uwaterloo.ca</a></p> <p>TA: Sarah Griffith  <a href="mailto:se2griffith@uwaterloo.ca">se2griffith@uwaterloo.ca</a></p> <p>Your TAs check email and the <a href="#">Ask the Instructor</a> discussion topic* frequently and will make every effort to reply to your questions.</p>
<p><b>Technical Support,</b> Centre for Extended Learning</p> <ul style="list-style-type: none"> <li>• Technical problems with Waterloo LEARN</li> </ul>	<p><a href="mailto:learnhelp@uwaterloo.ca">learnhelp@uwaterloo.ca</a></p> <p>Include your full name, WatIAM user ID, student number, and course name and number.</p> <p>Technical support is available during regular business hours, Monday to Friday, 8:30 AM to 4:30 PM (Eastern Time).</p> <p><a href="#">LEARN Help Student Documentation</a> </p>
<p><b>Learner Support Services,</b></p>	<p><a href="#">Student Resources</a> </p>

- General inquiries
- WatCards (Student ID Cards)
- Examination information

[extendedlearning@uwaterloo.ca](mailto:extendedlearning@uwaterloo.ca)

+1 519-888-4002

Include your full name, WatIAM user ID, student number, and course name and number.

\*Discussion topics can be accessed by clicking **Connect** and then **Discussions** on the course navigation bar above.

# Course Description and Learning Outcomes

## Course Description

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The primary goal of this course is to help students become informed consumers of quantitative information in social science research. Emphasis will be placed on understanding basic principles of statistics and learning when and how to apply them.

## Learning Outcomes

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

- explain how statistics are used in social science research to organize quantitative information, test hypotheses, and report research findings;
- identify variables in a data set and the level of measurement for each variable;
- use various descriptive statistics, tables, and graphs to summarize quantitative information, including data that you collect yourself, or data presented to you through different sources;
- describe the logic of hypothesis testing procedures and the use of inferential statistics in social research;
- use appropriate statistics to answer different research questions and test different hypotheses involving one or two variables; and
- read with ease basic quantitative information, including tables and graphs, and research "findings," including hypothesis testing results in academic journals and the general media.

*This online course was developed by Dr. Hsiao D'Ailly, with instructional design and multimedia development support provided by the Centre for Extended Learning.*

# About the Course Author and Instructor

## Course Author — Dr. Hsiao D'Ailly

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### Educational Background

Hsiao obtained her BA from Taiwan National Normal University. She completed both her Master's degree in Education and PhD in Psychology at the University of Western Ontario. Hsiao also held a two year SSHRC post-doctoral fellowship at the Psychology department at UW before coming to Renison.

### Current Research

Immigrant adaptation, community-based research, and cross-cultural psychology.

### Philosophy of Teaching

Hsiao believes that only "meaningful learning" is true learning. She encourages students to always see the applications of their new knowledge in real life situations. Her philosophy of teaching fits well with the constructivist theory of learning, believing that learning is an active process in which students construct new ideas or concepts based upon their current and past knowledge.

### Hobbies/Interests/Sports

When not involved in research, Hsiao likes to listen to music, play music, read, watch movies, walk with friends, go to new places, and see new things.



## Course Instructor — Andriy Struk

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Andriy received his BSc, MA, and PhD in Psychology from University of Waterloo. His research focused on understanding the experience of boredom, as well as, why and how people regulate their behavior more generally. Extensively experienced with a variety of data management methods, programming, as well as statistical analysis, Andriy currently spends much of his time broadening his understanding of financial markets and developing systems to facilitate trading. In his spare time he likes to go for walks, and more serious backcountry backpacking trips when weather permits, when he is cooped up at home a good sci-fi show is his go-to.


# Materials and Resources


## Textbook

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### Required

1. Heiman, G.W. (2014). *Behavioral Sciences STAT (2nd Edition)*. Toronto: Houghton Mifflin.

For textbook ordering information, please contact the [W Store | Course Materials + Supplies](#) .

For your convenience, you can compile a list of required and optional course materials through [BookLook](#)  using your Quest userID and password. If you are having difficulties ordering online and wish to call the Waterloo Bookstore, their phone number is +1 519-888-4673 or toll-free at +1 866-330-7933. Please be aware that textbook orders **CANNOT** be taken over the phone.

## Resources

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- [Library services for Co-op students on work term and Extended Learning students](#) 

## Grade Breakdown

The following table represents the grade breakdown of this course.

Activities and Assignments	Weight (%)
Module Review Exercises (Best 10 of 11)	20%
Online Quizzes and SDS 250R Survey (Best 10 of 12)	20%
Assignments (2 x 5%)	10%
Online Midterms (2 x 10%)	20%
Final Examination	30%

## Course Policies

### Late Assignments

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Late assignments will not be graded unless there is a documented illness or family emergency.

## Online Midterms


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You may only take the midterms once. You may not retake a midterm. In cases of severe illness or other extenuating circumstances, with supporting documents, the weighting for the online midterm may be allocated to the final exam.

# University Policies

## Submission Times

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Please be aware that the University of Waterloo is located in the **Eastern Time Zone** (GMT or UTC-5 during standard time and UTC-4 during daylight saving time) and, as such, the time that your activities and/or assignments are due is based on this zone. If you are outside the Eastern Time Zone and require assistance with converting your time, please try the [Ontario, Canada Time Converter](#) .

## Accommodation Due to Illness


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**If your instructor has provided specific procedures for you to follow if you miss assignment due dates, term tests, or a final examination, adhere to those instructions.** Otherwise:

### Missed Assignments/Tests/Quizzes

Contact the instructor as soon as you realize there will be a problem, and preferably within 48 hours, but no more than 72 hours, have a medical practitioner complete a [Verification of Illness Form](#) .

**Email** a scanned copy of the Verification of Illness Form to your instructor. In your email to the instructor, provide your name, student ID number, and exactly what course activity you missed.

Further information regarding Management of Requests for Accommodation Due to Illness can be found on the [Accommodation due to illness](#)  page.



### Missed Final Examinations

Your faculty determines academic accommodation; therefore we advise you to speak with your professor if you anticipate being unable to fulfill academic requirements due to illness or other extenuating circumstances.


Further information about Examination [Accommodations](#)  is available in the Undergraduate Calendar.

## Academic Integrity

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In order to maintain a culture of academic integrity, members of the University of Waterloo community are expected to promote honesty, trust, fairness, respect, and responsibility. **If you have not already completed the online tutorial regarding academic integrity you should do so as soon as possible.** Undergraduate students should see the [Academic Integrity Tutorial](#)  and graduate students should see the [Graduate Students and Academic Integrity](#)  website.

Proper citations are part of academic integrity. Citations in CEL course materials usually follow CEL style, which is based on APA style. Your course may follow a different style. If you are uncertain which style to use for an assignment, please confirm with your instructor or TA.

For further information on academic integrity, please visit the [Office of Academic Integrity](#) .

## Turnitin

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**Turnitin.com:** Text matching software (Turnitin®) may be used to screen assignments in this course. Turnitin® is used to verify that all materials and sources in assignments are documented. Students' submissions are stored on a U.S. server, therefore students must be given an alternative (e.g., scaffolded assignment or annotated bibliography), if they are concerned about their privacy and/or security. Students will be given due notice, in the first week of the term and/or at the time assignment details are provided, about arrangements and alternatives for the use of Turnitin® in this course.

It is the responsibility of the student to notify the instructor if they, in the first week of term or at the time assignment details are provided, wish to submit the alternate assignment.

[Turnitin® at Waterloo](#) 




## Discipline

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A student is expected to know what constitutes [academic integrity](#)  to avoid committing an academic offence, and to take responsibility for his/her actions. A student who is unsure whether an action constitutes an offence, or who needs help in learning how to avoid offences (e.g., plagiarism, cheating) or about “rules” for group work/collaboration, should seek guidance from the course instructor, academic advisor, or the undergraduate Associate Dean. For information on categories of offences and types of penalties, students should refer to [Policy 71 - Student Discipline](#) . For typical penalties, check [Guidelines for the Assessment of Penalties](#) .

## Appeals

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A decision made or penalty imposed under [Policy 70 - Student Petitions and Grievances](#) , (other than a petition) or [Policy 71 - Student Discipline](#) , may be appealed if there is a ground. A student who believes he/she has a ground for an appeal should refer to [Policy 72 - Student Appeals](#) .

## Grievance

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A student who believes that a decision affecting some aspect of his/her university life has been unfair or unreasonable



may have grounds for initiating a grievance. Read [Policy 70 - Student Petitions and Grievances](#), Section 4. When in doubt please be certain to contact the department's administrative assistant who will provide further assistance.

## Final Grades

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In accordance with [Policy 46 - Information Management](#), Appendix A - Access to and Release of Student Information, the Centre for Extended Learning does not release final examination grades or final course grades to students. Students must go to [Quest](#) to see all final grades. Any grades posted in Waterloo LEARN are unofficial.

## AccessAbility Services

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[AccessAbility Services](#), located in Needles Hall, collaborates with all academic departments to arrange appropriate accommodations for students with disabilities without compromising the academic integrity of the curriculum. If you require academic accommodation to lessen the impact of your disability, please register with AccessAbility Services at the beginning of each academic term and for each course.

## Accessibility Statement

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The Centre for Extended Learning strives to meet the needs of all our online learners. Our ongoing efforts to become aligned with the [Accessibility for Ontarians with Disabilities Act \(AODA\)](#) are guided by University of Waterloo accessibility [Legislation](#) and policy and the [World Wide Web Consortium's \(W3C\) Web Content Accessibility Guidelines \(WCAG\) 2.0](#). The majority of our online courses are currently delivered via the Desire2Learn Learning Environment. Learn more about [Desire2Learn's Accessibility Standards Compliance](#).

## Use of Computing and Network Resources

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Please see the [Guidelines on Use of Waterloo Computing and Network Resources](#).

## Copyright Information

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### UWaterloo's Web Pages

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If there are any questions about this notice, please contact the University of Waterloo, Centre for Extended Learning, Waterloo, Ontario, Canada, N2L 3G1 or [extendedlearning@uwaterloo.ca](mailto:extendedlearning@uwaterloo.ca).