

# Course Outline

<b>Course Code</b>	RSM 384 H1 F
<b>Course Name</b>	Sports Analytics
<b>Term, Year</b>	Fall, 2023
<b>Course Meets</b>	W 3-5
<b>Web page URL</b>	<a href="https://q.utoronto.ca">https://q.utoronto.ca</a>

## Instructor Details

Name	Email	Office Hours
Matthew Mitchell	matthew.mitchell@utoronto.ca	By appointment. I am available most mornings in RSM 8015 or online.

## Course Scope, Mission and Learning Outcomes

This course is intended to apply concepts of analytic management and data science to the sports world. An emphasis of model building and application of models studied previously, including economics and econometrics, is intended to deepen the students' ability to apply these skills in other areas as well.

We will do so by addressing papers at the research frontier, since those papers are an opportunity to learn about the latest thinking. The papers will both be interested in sports intrinsically, and interested in sports as a way to assess other theories that are a part of business education.

## Course Prerequisites

*ECO220Y1/ ECO227Y1/( STA220H1, STA255H1)/( STA237H1, STA238H1)/( STA257H1, STA261H1)*

## Course Materials

Course readings will be uploaded to the course website, or a link will be provided. Note that some readings require you to be on the university network or vpn to access. In addition to what is listed below, there will be course notes on each subject.

One major component of the course will be learning to use the statistics package R. To do this, we will be doing some "labs" from Michael Lopez (statsbylopez.com). These need to be done outside of class time and will familiarize you with data analysis with R.

If you have no coding experience, you may need more help. We will be providing an extra sessions on coding with R run by at R expert, Sepideh Hosseni. There will also be support through the commerce coding lounge.

These materials will cost a total of \$0.00. The use of these materials complies with all University of Toronto policies which govern fees for course materials.

## Evaluation and Grades

Grades are a measure of the knowledge and skills developed by a student within individual courses. Each student will receive a grade on the basis of how well they have command of the course materials, skills and learning objectives of the course.

Work	Percentage of grade	Due Date
Homework Assignments	50%	See class schedule
Final Group Project	40%	Presentations last two weeks of class, paper due date end of course
Question Submission for Speakers	10%	TBA

## Course Format and Expectations

### *Writing Assignments or Presentations*

The final group project has both a written and presentation component. The latter is intended to help you develop your communication skills. In your written assignments, you should aim for clarity, strong organization, concision, professionalism, and correct grammar. Your presentations should reflect strong planning and organization, clarity of speech, and an engaging demeanour. Sources, whether in written or presentation assignments, should always be correctly attributed.

Support is available through the RC Centre for Professional Skills (CPS) for students who would like help or feedback on their writing or speaking (presentations). CPS offers both individual and group appointments with trained writing instructors and presentation coaches who are familiar with the RC program and common types of business assignments. You can also access your college Writing Centres for help with written assignments.

You can book an appointment with a writing or presentation coach through the RC Centre for Professional Skills Writing Centre. For more information about writing centres, student supports, and study resources, see the [Writing and Presentation Coaching academic support page](#).

### *Team or Group Assignments*

The group project requires students to work in teams of 3-5. Learning to work together in teams is a crucial transferrable skill you will use not only in your coursework, but also in your future careers. Support is available if you encounter common teamwork challenges such as:

- Team members feeling left out of the team.
- Team members not responding in a timely manner to communication.
- Division or quality of work among team members being unequal or unfair.

Consult the [Centre for Professional Skills Teamwork Resources page](#) for tips, strategies, and best practices. You can also [book an appointment with a teamwork mentor](#) through the RC Centre for Professional Skills Writing Centre. Teamwork mentors can help you resolve or mitigate conflict, strategize on planning, or improve team communication.

If you are a student registered with Accessibility Services, and extensions are one of your academic accommodations, consult with your Accessibility Advisor about the teamwork in this course.

### *Missed Tests and Assignments (including mid-term and final-term assessments)*

Students who miss a test or assignment for reasons entirely beyond their control (e.g. illness) may request special consideration **within 2 business days** of the missed midterm/test/assignment due date.

In such cases, students must:

1. Complete the Request for Special Consideration form: <https://uoft.me/RSMConsideration>
2. Provide documentation to support the request, eg. Absence Declaration from [ACORN](#), medical note etc.

**Please note:** As of September 2023, students may use the Absence Declaration on ACORN **\*one time per term\*** to report an absence and request consideration. **Any subsequent absence will require a [Verification of Illness form](#) or other similar relevant documentation.**

Students who do not submit their requests and documentation within 2 days may receive a grade of 0 (zero) on the missed course deliverable.

### *Late Assignments*

We will discuss the assignments as soon as they are due; therefore late work cannot be accepted. If you have an excused consideration the grading will be re-weighted.

## Statement on Equity, Diversity and Inclusion

The University of Toronto is committed to equity, human rights and respect for diversity. All members of the learning environment in this course should strive to create an atmosphere of mutual respect where all members of our community can express themselves, engage with each other, and respect one another's differences. U of T does not condone discrimination or harassment against any persons or communities.

## Commitment to Accessibility

The University is committed to inclusivity and accessibility, and strives to provide support for, and facilitate the accommodation of, individuals with disabilities so that all may share the same level of access to opportunities and activities offered at the University.

If you require accommodations for a temporary or ongoing disability or health concern, or have any accessibility concerns about the course, the classroom or course materials, please [email Accessibility Services](#) or visit the [Accessibility Services website](#) for more information as soon as possible. Obtaining your accommodation letter may take up to several weeks, so get in touch with them as soon as possible. If you have general questions or concerns about the accessibility of this course, you are encouraged to reach out to your instructor, course coordinator, or Accessibility Services.

# Generative AI / ChatGPT

Using AI to help with coding is standard practice and allowed in this course. Handing entire homework problems to the AI, however, is not standard practice, is not allowed, and I will be able to spot a mile away.

## Academic Integrity

Academic Integrity is a fundamental value essential to the pursuit of learning and scholarship at the University of Toronto. Participating honestly, respectfully, responsibly, and fairly in this academic community ensures that the U of T degree that you earn will continue to be valued and respected as a true signifier of a student's individual work and academic achievement. As a result, the University treats cases of academic misconduct very seriously.

[The University of Toronto's Code of Behaviour on Academic Matters](#) outlines the behaviours that constitute academic misconduct, the process for addressing academic offences and the penalties that may be imposed. You are expected to be familiar with the contents of this document. Potential offences include, but are not limited to:

In papers and assignments

- Using someone else's ideas or words without appropriate acknowledgement.
- Submitting your own work in more than one course without the permission of the instructor.
- Making up sources or facts.
- Obtaining or providing unauthorized assistance on any assignment (this includes collaborating with others on assignments that are supposed to be completed individually).

On test and exams

- Using or possessing any unauthorized aid, including a cell phone.
- Looking at someone else's answers.
- Misrepresenting your identity.
- Submitting an altered test for re-grading.

Misrepresentation

- Falsifying institutional documents or grades.
- Falsifying or altering any documentation required by the University, including (but not limited to) medical notes.

All suspected cases of academic dishonesty will be investigated by the procedures outlined in the [Code of Behaviour on Academic Matters](#). If you have any questions about what is or is not permitted in the course, please do not hesitate to contact the course instructor. If you have any questions about appropriate research and citation methods, you are expected to seek out additional information from the instructor or other U of T or RC resources such as the RC Centre for Professional Skills, the College Writing Centres or the Academic Success Centre.

## Email

At times, the course instructor may decide to communicate important course information by email. As such, all U of T students are required to have a valid UTMail+ email address. You are

responsible for ensuring that your UTmail+ email address is set up and properly entered on ACORN. For more information visit the [Information Commons Help Desk](#).

Forwarding your utoronto.ca email to a Gmail or other type of email account is not advisable. In some cases, messages from utoronto.ca addresses sent to Gmail accounts are filtered as junk mail, which means that important messages from your course instructor may end up in your spam or junk mail folder.

## Recording Lectures

Lectures and course materials prepared by the instructor are considered by the University to be an instructor's intellectual property covered by the Canadian Copyright Act. Students wishing to record a lecture or other course material in any way are required to ask the instructor's explicit permission and may not do so unless permission is granted. Students who have been previously granted permission to record lectures as an accommodation for a disability are excepted. This includes tape recording, filming, photographing PowerPoint slides, Quercus materials, etc.

If permission for recording is granted by the instructor (or via Accessibility Services), it is intended for the individual student's own study purposes and does not include permission to "publish" them in any way. It is forbidden for a student to publish an instructor's notes to a website or sell them in any other form without formal permission.

## Weekly Schedule (tentative)

Session	Date	Topic	Readings/Deliverables
1	Sept 13	Introduction: Applying Linear Regression to sports data	Hakes, Jahn K., and Raymond D. Sauer. 2006. "An Economic Evaluation of the Moneyball Hypothesis." <i>Journal of Economic Perspectives</i> , 20(3): 173-186 Lab: Intro Lab: Bivariate analysis
2	Sept 20	R Training: Tennis Data	Lab: Multiple Regression
3	Sept 27	Linear Weights Analytics and Regression: Prediction from multiple factors	<a href="http://www.fangraphs.com/library/woba-as-a-gateway-statistic/">http://www.fangraphs.com/library/woba-as-a-gateway-statistic/</a> Lab: Multiple Regression
4	Oct 4	Logistic Regression: Expected Points/Goals Metrics	Lab: Logistic Regression
5	Oct 11	Fixed Effects Regression: Adjusted +/-	<a href="http://www.82games.com/comm30.htm">http://www.82games.com/comm30.htm</a> HW1 Due
6	Oct 18	From Logit to Multinomial Logit: The value of field position in the NFL	<a href="https://arxiv.org/abs/1802.00998">https://arxiv.org/abs/1802.00998</a>
7	Oct 25	Structural modelling and the "Pythagorean theorem of baseball"	<a href="http://www.matterofstats.com/mafl-stats-journal/2014/7/6/modelling-team-scores-as-weibull-distributions">http://www.matterofstats.com/mafl-stats-journal/2014/7/6/modelling-team-scores-as-weibull-distributions</a> <a href="https://arxiv.org/pdf/math/0509698.pdf">https://arxiv.org/pdf/math/0509698.pdf</a> HW2 Due
8	Nov 1	Game theory and structural modelling: Evidence from Tennis, Hockey, and Soccer	<a href="https://www.jstor.org/stable/3083302?seq=1">https://www.jstor.org/stable/3083302?seq=1</a>
9	Nov 15	Difference-in-Difference Modelling: Referee Bias in Cricket	<a href="https://www.dropbox.com/s/0o06qjxkl9x3k14/cricket_paper.pdf">https://www.dropbox.com/s/0o06qjxkl9x3k14/cricket_paper.pdf</a>
10	Nov 22	Behavioral Bias: Evidence from the NFL Draft (If we get there!)	<a href="http://www.nber.org/papers/w15347">http://www.nber.org/papers/w15347</a> HW3 due
11 12	Nov 29/Dec 6	Project Presentations	

**Please note that the last day you can drop this course without academic penalty is November 6, 2023.**

## Other Useful Links

- [Become a volunteer note taker](#)
- [Accessibility Services Note Taking Support](#)
- [Credit / No-Credit in RSM courses](#)
- [Rotman Commerce Academic Support](#)

## URL links for print

- ACORN: <http://www.acorn.utoronto.ca/>
- Email Accessibility Services: [accessibility.services@utoronto.ca](mailto:accessibility.services@utoronto.ca)
- Accessibility Services website: <http://studentlife.utoronto.ca/as>
- University's Plagiarism Detection Tool FAQ: <https://uoft.me/pdt-faq>
- The University of Toronto's Code of Behaviour on Academic Matters: <http://www.governingcouncil.utoronto.ca/policies/behaveac.htm>
- Information Commons Help Desk: <http://help.ic.utoronto.ca/category/3/utmail.html>
- Become a volunteer note taker: <https://studentlife.utoronto.ca/program/volunteer-note-taking/>
- Accessibility Services Note Taking Support: <https://studentlife.utoronto.ca/service/note-taking-support/>
- Credit / No-Credit in RSM courses: <https://rotmancommerce.utoronto.ca/current-students/degree-requirements/credit-no-credit-option/>
- Rotman Commerce Academic Support: <https://rotmancommerce.utoronto.ca/current-students/academic-support/>
- Book an appointment with a writing or presentation coach: <http://uoft.me/writingcentres>
- Writing and Presentation Coaching academic support page: <https://rotmancommerce.utoronto.ca/current-students/academic-support/writing-and-presentation-coaching/>
- Centre for Professional Skills Teamwork Resources page: <https://rotmancommerce.utoronto.ca/teamwork-resources>
- Book an appointment with a Teamwork Mentor: <http://uoft.me/writingcentres>