Course Outline

Course Code	RSM 312 H1 S
Course Name	Gerhard Trippen
Term, Year	Winter 2023
Course Meets	Thu, 13:00 – 15:00 in Rotman Finance Lab
Web page URL	https://q.utoronto.ca Make sure you **always read the online Announcements**!

Instructor Details

Name	Email	Phone	Office Hours	Virtual Office Link
Gerhard Trippen	Gerhard.Trippen@rotman.utoronto.ca (Please start subject with **RSM312)**	416-978-0383	Fri, 17:00-19:00 by appointment only and other times by appointment.	online mechanism preferred

Course Scope, Mission and Learning Outcomes

This course is for those that want to gain the foundational skills of working with data. 80% of business analysis efforts are spent on finding, extracting, cleaning, and visualizing data prior to performing the actual data analysis. Whether or not you are considering a career in data sciences, this course introduces the essential skills for working with data that can apply to careers in information technology, business, finance, marketing analysis, or data sciences. This is a hands-on course focused on developing practical skills across a broad range of the most common data management and analysis concepts, such as relational database design and its implementation with SQL and Python, programming fundamentals, data manipulation and data cleaning and preparation, and data analysis and visualization techniques using Python.

The objectives of this course are:
• Apply the principles of Database Management System Design concepts from analysis to full implementation.
• Create Structured Query Language (SQL) queries appropriate for data extraction and summarization tasks.
• Demonstrate the ability to prepare, explore and validate data for business analysis.
• Apply advanced data analysis techniques towards the development of decision-making tools.
• Develop Business Intelligence Dashboards to support business decision-making.

Course Prerequisites

RSM100Y1/RSM100H1/MGT100H1

If the course has a co-requisite, include the following note: If you drop course XXX (the co-requisite) during the academic term, you must also drop this course. Contact Rotman Commerce Academic Services for academic advising if needed.

Course Materials

Required Readings

Reading Package	DataCamp	Required	https://www.datacamp.com/
Textbook	SQL [electronic resource] : a beginner's guide / Robert Sheldon. New York : McGraw-Hill/Osborne, c2003. 2nd ed.	Optional	UofT Library
Textbook	SQL [electronic resource] : clearly explained / Jan L. Harrington. Amsterdam ; New York : Morgan kaufmann Publishers, c2003. 2nd ed.	Optional	UofT Library
Textbook	Beginning SQL / John Kauffman, Brian Matsik, Kevin Spencer ; with Ian Herbert, Julian Skinner, Sakhr Youness. Birmingham, UK ; Chicago : Wrox Press, c2001.	Optional	UofT Library
Textbook	A Guide to SQL Philip J. Pratt, Mary Z. Last. Publisher: Cengage Learning	Optional	Online
Textbook	Python Data Analytics [electronic resource] : With Pandas, NumPy, and Matplotlib / by Fabio Nelli. Berkeley, CA : Apress : Imprint: Apress, 2018. 2nd ed.	Optional	UofT Library
Textbook	Python for data analysis : data wrangling with pandas, NumPy, and IPython / Wes McKinney. Sebastopol, CA : O'Reilly Media, Inc., 2017. Second edtiion. [*sic*]	Optional	UofT Library
Textbook	Foundations for analytics with Python [electronic resource] / Clinton W. Brownley. Sebastopol, CA : O'Reilly Media, Inc., 2016. First edition.	Optional	UofT Library
Textbook	Pandas for everyone : Python data analysis / Daniel Y. Chen. Boston : Addison-Wesley, [2018]	Optional	UofT Library

Electronic Course Materials

This course will be using the following electronic course materials:

Datacamp: https://www.datacamp.com/

Anaconda: https://www.anaconda.com/

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
Individual Coding Assignments	10%	Ongoing
Group Assignment 1	15%	2023-02-27 23:59
Group Assignment 2	15%	2023-03-27 23:59
Group Assignment 3	10%	2023-04-10 23:59
Final Term Test	50%	TBD

Course Format and Expectations

We will be using Jupyter Notebook / DataCamp for data analysis exercises throughout the course. All students will receive a **free** DataCamp subscription for six months, with access to all the online courses DataCamp offers (not just the chapters that are covered in the course). To register for DataCamp an email address will be required which you need to share with me in the beginning of the term. For students who would prefer to opt out and not use DataCamp, solutions to exercises can be submitted to me by email.

Writing Assignments or Presentations

The case studies are intended to help you develop your communication skills. How well you communicate your ideas, in writing or orally, will be considered in the evaluation of the assignment. 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 case studies require students to work in teams of 3-4 (preferably 4). Only one report per group should be submitted. An **electronic copy** is to be handed in online through QUERCUS. 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.

In such cases, students must:

1. Notify the instructor AND the Rotman Commerce Program Office **on the date** of the missed course deliverable, e.g. missed test, final assessments, assignment or class (in the case of participation marks).
2. Complete a [Request for Special Consideration Form](#) and submit it along with your Absence Declaration on [ACORN](#) (please read the instructions on how to use the Absence Declaration in ACORN) within **2 business days** of the originally scheduled course deliverable.

Students who do not provide this information will be given a grade of 0 (zero) for the missed course deliverable.

Late Assignments
All assignments are due on the date and at the time specified in Quercus. Late submissions will normally be penalized by 20% if the assignment is not received on the specified date, at the specified time. A further penalty of 10% will be applied to each subsequent day.

Students who, for reasons beyond their control, are unable to submit an assignment by its deadline must obtain approval from the instructor for an extension. Supporting documentation will be required as per the policy on missed tests and assignments.

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.

Ouriginal (Only include this section if you plan to use plagiarism detection software.)

Normally, students will be required to submit their course essays to the University's plagiarism detection tool for a review of textual similarity and detection of possible plagiarism. In doing so, students will allow their essays to be included as source documents in the tool's reference database, where they will be used solely for the purpose of detecting plagiarism. The terms that apply to the University's use of this tool are described on the [University's Plagiarism Detection Tool FAQ](#) page from Centre for Teaching Support & Innovation.

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 question 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 *(EXAMPLE)*

Session	Date	Topic
1	2023-01-12	Overview Introduction
2	2023-01-19	SQL Basics Database Management Fundamentals
3	2023-01-26	Normalization Entity Relationship Diagram
4	2023-02-02	SQL Fundamentals
5	2023-02-09	More Advanced SQL
6	2023-02-16	Structuring Analytical Data Tables Merging and Joining
7	2023-03-02	Data Preparation for Analysis Python Basics
8	2023-03-09	Data Structures for Analysis Python/pandas Data Structures
9	2023-03-16	Data Cleaning and Preprocessing
10	2023-03-23	Data Manipulation and Descriptive Statistics
11	2023-03-30	Data Visualization Basic Plotting
12	2023-04-06	Data Visualization More Advanced Graphs

Please note that the last day you can drop this course without academic penalty is March 19, 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

- 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
- Request for Special Consideration Form: https://rotmancommerce.utoronto.ca/current-students/forms-requests-and-appeals/forms/
- ACORN: http://www.acorn.utoronto.ca/
- Email Accessibility Services: 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/