

**Ryerson University
Department of Computer Science**

**CPS842 : Information Retrieval and Web Search
Course Outline and Course Management Form (Fall 2022)**

Land Acknowledgement

Toronto is in the 'Dish With One Spoon Territory'. The Dish With One Spoon is a treaty between the Anishinaabe, Mississauga and Haudenosaunee that bound them to share the territory and protect the land. Subsequent Indigenous Nations and peoples, Europeans and all newcomers have been invited into this treaty in the spirit of peace, friendship and respect.

Calendar Description:

Instructors:

Dr. Qinmin Vivian Hu.

Email: vivian@ryerson.ca

Office: ENG 287A

Lectures: Mondays 4-5pm KHW360, Thursdays 10-12pm EPH229

This course discusses basic information retrieval models, evaluation methods, state of art of search engines and new trends in web search. Topics covered include basic IR models, indexing, query operation, evaluation, categorization and clustering, web search, link analysis, web crawling, etc. After completing this course, students will have acquired the core techniques in building text retrieval systems, hands-on experience in building the core parts of a web-based search engine, and knowledge of IR applications on the world wide web.

Prerequisites:

- CPS 305 Data Structures
- CPS 209 Computer Science II

Course Organization:

3 weekly lecture hours, 1 weekly lab hour.

Office Hours: Wednesdays 11am - 1pm

Textbook and References

Recommended Textbooks:

- Introduction to Information Retrieval, by C. Manning, P. Raghavan, and H. Schütze (Cambridge University Press, 2008). Website link: <https://nlp.stanford.edu/IR-book/>

Grading Scheme

The final grade in the course is calculated as follows:

- Assignments (including presentations): $10\% \times 3 = 30\%$

- Labs: 5%
- Midterm exam: 35%
- Final Project: 30%

Detailed Topics

1. Introduction to information retrieval
2. Boolean retrieval
3. The term vocabulary and postings lists
4. Dictionaries and tolerant retrieval
5. Index construction
6. Index compression
7. Scoring, term weighting and the vector space model
8. Computing scores in a complete search system
9. Evaluation in information retrieval
10. Relevance feedback and query expansion
11. Probabilistic information retrieval
12. Text classification and Naive Bayes
13. Web search basics
14. Web crawling and indexes
15. Link analysis

Assignment Project Exam Help

Missed Evaluations:

Students are required to inform their instructor of any situation which arises during the semester which may have an adverse effect upon their academic performance, and must request any considerations and accommodations according to the relevant policies and well in advance. Failure to do so will jeopardize any academic appeals.

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Make-up Assessments: An Academic Consideration Request for a missed midterm test or final exam may, at the instructor's discretion, result in a make-up assessment. You must consult with your instructor for details on arranging for make-up midterm test or final exam may be in the form of a one-on-one oral or online written exam at the discretion of the instructor that will be administered by the TA under the instructor's agreement.

IMPORTANT: your absence is for a longer period, or you miss your midterm or final exam due to health issues or religious observance, you need to follow the instructions below:

- *Medical certificates* – If a student misses the deadline for submitting an assignment, or the date of an exam or other evaluation component because of illness, he or she must submit a Ryerson Student Medical Certificate AND an Academic Consideration form within 3 working days of the missed date. *Students who miss an assessment due to cold or flu-like symptoms, or due to self-isolation, are currently not required to provide a health certificate. Other absences must follow [Policy 167: Academic Consideration](#).* Academic Consideration does allow for a once per term academic consideration request without supporting documentation if the absence is less than 3 days in duration and is not for a final exam/final assessment. In both of those instances, documentation is required. For more information please see Senate [Policy 167: Academic Consideration](#).

Important:

- The Academic Consideration Request (ACR) online form (<https://www.ryerson.ca/senate/StudentInfo/AcademicConsiderationRequest/>) must be used by all undergraduate students in the Faculty of Science, Ted Rogers School of Management (TRSM), Faculty of Engineering & Architectural Science (FEAS), with the exception of the Electrical Engineering program, and Faculty of Arts (FoA).
- Students in all other Ryerson programs, and students taking courses in the G. Raymond Chang School of Continuing Education, must submit their request for academic consideration on health grounds by completing the Academic Consideration Document Submission Form (https://www.ryerson.ca/content/dam/senate/forms/academic_consideration_document_submission.pdf), along with a completed Student Health Certificate (or letter from an appropriate regulated health professional), <https://www.ryerson.ca/content/dam/senate/forms/medical.pdf>.
- *Religious observance* – If a student needs accommodation because of religious observance, he or she must submit a Request for Accommodation of Student Religious, Aboriginal and Spiritual Observance AND an Academic Consideration form within the first 2 weeks of the class or, for a final examination, within 2 weeks of the posting of the examination schedule. If the required absence occurs within the first 2 weeks of classes, or the dates are not known well in advance as they are linked to other conditions, these forms should be submitted with as much lead time as possible in advance of the required absence. Both documents are available at <http://www.ryerson.ca/senate/forms/reobservforminstr.pdf>. If you are a full-time or part-time degree student, then you submit the forms to your own program department or school. If you are a certificate or non-certificate student, then you submit the forms to the staff at the front desk of the Chang School.

Students who need academic accommodation support should register with the Academic Accommodation Support office (formerly called the Access Centre). Before the first graded work is due, registered students should inform their instructors through an "Accommodation Form for Professors" that they are registered with Academic Accommodation Support and what accommodations are required.

Communication with Students:

Ryerson's email policy <http://www.ryerson.ca/content/dam/senate/policies/pol157.pdf> states that only Ryerson e-mail accounts are to be used for communication with students. All students, including continuing education students, have access to Ryerson email through their my.ryerson.ca site, and this is the official way in which they receive communication. All students are required to register for and maintain this account. **Emails sent from other accounts may not be answered!**

▷ Students are responsible for logging on to the instructor's course website, and for following all course related instructions so transmitted. Students should also check their emails (ryerson.ca_email as per academic policy) daily for any notices from the professor and are responsible for following any directives so sent.

▷ As course topics are typically developed based on material from previous lectures, students are strongly urged to attend ALL classes. If you miss any material due to illness or other unavoidable circumstance, be sure to catch up before the next class. Many studies have demonstrated that class attendance is the best predictor of success in any class.

▷ Test marks and attendance credits will be available on the Brightspace/D2L course shell. As per Ryerson regulation, final grades will be disclosed only by the registrar's office.

Rules and regulations:

The rules and regulations are for the enjoyment and respect of everyone in the class including yourself. Thank you very much for abiding by them:

- ▷ Please refrain of talking during the lecture online. Everybody needs to hear correctly. If you feel the urge to talk, you are invited to step out of the zoom classroom.
- ▷ Please shut down you cell phone or put it in vibrating mode during the lecture. If you are expecting an important call, and do not have a vibrating function, please answer it immediately and step out of the zoom classroom to talk (turning your microphone to mute all the time).
- ▷ Please arrive on time, class will promptly begin at :10. If you arrive late or have to leave early, please do so quietly and be nice to your peers online.
- ▷ Please be reminded that the Teaching Assistants (TAs) are the representatives of the professor in the lab sessions. You are to treat the TAs with respect.
- ▷ Emails to your professor should always begin with a greeting (Dear Dr. A, Dear Professor B) and be written in proper English (no chat room lingo please). You should also always indicate your name (family, given in that order), course (CPS125) and *section number* in *all* communications. You must always use your *ryerson.ca* email to communicate with your professor. Messages sent from other email addresses (gmail, hotmail, ...) or missing proper identification as noted just above likely will not be read. Do not use your Student Identification Number unless specifically requested. Messages to the lab teaching assistants must be CCd to the section Professor.

Academic Policies:

a. Ryerson Policies of Interest

Ryerson Senate Policies - <http://www.ryerson.ca/senate/policies/>

Ryerson Academic Integrity - <http://www.ryerson.ca/academicintegrity/>

Policy 46 - Undergraduate Grading, Promotion and Academic Standing

Policy 60 - Student Code of Academic Conduct

Policy 61 - Student Code of Non-academic Conduct

Policy 134 - Undergraduate Academic Consideration and Appeals

Policy 135 - Examination Policy

Policy 150 - Accommodation of Student Religious Observance Obligations

Policy 157 - Student Email Accounts for Official University Communication

b. Obligations: Students need to inform faculty of any situation arising during the semester which may have an adverse effect upon their academic performance; they must request any necessary considerations (e.g. medical or compassionate), or accommodations [e.g. religious observance, disability (should be registered with the Access Center), etc.] according to policies and well in advance. Failure to do so will jeopardize any academic appeals.

c. Re-grading and Re-calculation: Must be requested within 10 working days of the return of the graded assignment to the class.

Academic Conduct:

<http://www.ryerson.ca/academicintegrity/>

In order to create an environment conducive to learning and respectful of others' rights, phones and pagers must be silenced during lectures, lab sessions and evaluations. Students should refrain from disrupting the lectures by arriving late and/or leaving the classroom before the lecture is finished.

Academic Misconduct:

According to the Ryerson policy 60 (<http://www.ryerson.ca/content/dam/senate/policies/pol60.pdf>), academic misconduct includes, but is not limited to:

- Plagiarism which is the claiming of words, ideas, artistry, drawings or data of another person. This also includes submitting your own work in whole or in part for credit in two or more courses.
- Cheating
- Misrepresentation of personal identity or performance
- Submission of false information
- Contributing to academic misconduct
- Damaging, tampering, or interfering with the scholarly environment
- Unauthorized copying or use of copyrighted materials
- Violations of departmental policies or professional behavior
- Violations of specific departmental or course requirements

Committing academic misconduct will trigger academic penalties, including:

- A course-grade reduction that may be more severe than assigning a grade of “zero” (0) on course work; failing grades, suspension and possibly expulsion from the University. As a Ryerson student, you are responsible for familiarizing yourself with Ryerson conduct policies.
- *Cheating and plagiarism are serious offences. In accordance with the revised Policy 60 on academic integrity, an extra 5% penalty on the final grade will be applied if submitted projects are found not to be original work (in addition to the 0/10 mark which will be assigned for a non-original assignment). Project markers may also check the originality of the submissions using a plagiarism detection system.*
- *It is strictly forbidden to make recordings or take pictures during the lectures. It is also forbidden to redistribute the slides, the labs, the projects and other material found on the official course website, the professors' websites and D2L. Individuals found doing so will be charged with academic misconduct and could be prosecuted for copyright violations under the Copyright Act of Canada.*

Automatic Plagiarism Detection:

In this course, we will use Turnitin plagiarism Checking tool with submitted work. Students who do not want their work submitted to this plagiarism detection service must, by the end of the second week of class, consult with the instructor to make alternate arrangements.”; or the details of alternate arrangements including the deadlines for consultation with the instructor concerning the use of these arrangements.

Non-Academic Conduct:

Ryerson's Student Code of Non-academic Conduct is described in Senate Policy 61:

<http://www.ryerson.ca/content/dam/senate/policies/pol61.pdf>

Among many other infractions, the code specifically refers to the following as a violation: "Disruption of Learning and Teaching - Students shall not behave in disruptive ways that obstruct the learning and teaching environment".

Diversity and Inclusion Statement:

In this course, I would like to create a learning environment that supports a diversity of thoughts, perspectives and experiences, and honors your identities (including race, gender, class, sexuality, religion, ability, etc.). Please feel free to reach out with any issues regarding to this. For more information about our University's resources and services on Equity, Diversity, and Inclusion please visit <https://www.ryerson.ca/equity/>

Changes:

Modifications to the course procedures will be made in consultation with the students and will be announced on D2L course shell.

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Assignment Project Exam Help

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