

Course Outline

Introduction to the creation, delivery and analysis of multimedia content in systems with mobile devices. Topics include analysis of webs of documents, social network analysis, recommender systems and problems of trust, reputation and influence in mobile e-commerce systems.

Course Information

Instructor Name	Instructor Email
Dave McKenney	<u>davidmckenney@cunet.carleton.ca</u>
Lecture/Lab Hours	Course Webpage
Tuesdays/Thursdays	https://brightspace.carleton.ca/
9:35am-11:25am	

Course Delivery

This course will be delivered using a mix of asynchronous and synchronous delivery methods (i.e., using a blended approach). Pre-recorded lectures will be shared online to deliver primary lecture content. This is a lab-based course in which the students will spend most of their time working on assigned problems. Scheduled lecture times will be used for question/answer, assistance with lab assignments, and lab demonstrations. Some online lab and assignment demonstrations will also be supported.

Course Description

The principal course objective is to have a student create and analyze networks of multimedia and text resources found in social networks. The motivation for this objective is that social networks have value for two reasons: the relationships manifest through the links between network participants and the content that these individuals create or introduce to the network. During the course a student can expect to: create a network of documents/media, analyze social networks as graphs with particular properties and analyze multimedia documents and content using information retrieval techniques. Furthermore, students will learn to analyze large bodies of information for the purpose of extraction of general properties.

Required Textbook

There will be no required textbook purchase for this course. Reading material for the course will be shared via Brightspace.

Assessment Scheme

Your performance in this course will be assessed using several components. These include assigned lab problems and two assignments. Students are allowed to complete each of these components either individually or as a team of two. If working with a partner, both students must fill out the partner declaration form on Brightspace. The grades you achieve on these components will be weighted using the following scheme:

Assigned Lab Problems (10 × 5% each)	50%
Assignments (2 x 25% each)	50%



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Topics Covered

Below is a summary of topics the course may cover:

- RESTful applications: architecture, Node.js, Express
- Introduction to information retrieval: document structure and similarity
- Introduction to (social) network science: types of social network structures and their structural analysis
- Creation and analysis of webs of documents: web crawlers, pagerank
- Introduction to social network data analysis: tools and simple data mining techniques
- Recommender systems
- Problems in social networks: trust, reputation, influence and community detection
- Multimedia content: recognition and similarity

University Policies

Student Academic Integrity Policy

Every student should be familiar with the Carleton University student academic integrity policy. A student found in violation of academic integrity standards may be awarded penalties, which range from a reprimand to receiving a grade of F in the course or even being expelled from the program or University. Some examples of offences are plagiarism and unauthorized co-operation or collaboration. Information on this policy may be found in the Undergraduate Calendar. For more information, including the Standard Penalty Guideline, see https://science.carleton.ca/academic-integrity/.

Plagiarism

As defined by the Senate, "plagiarism is presenting, whether intentional or not, the ideas, expression of ideas or work of others as one's own". Such reported offences will be reviewed by the office of the Dean of Science. Standard penalty guidelines can be found <u>here</u>.

Unauthorized Co-operation or Collaboration

Senate policy states that "to ensure fairness and equity in assessment of term work, students shall not co-operate or collaborate in the completion of an academic assignment, in whole or in part, when the instructor has indicated that the assignment is to be completed on an individual basis". Please refer to the course outline statement or the instructor concerning this issue.

Use of AI Systems (e.g., ChatGPT, etc.)

Many of the assessed activities in this course were designed to be completed by an individual student working alone. Unless it is explicitly stated otherwise, the use of any AI tool to complete work will be considered academic misconduct. This includes, but is not limited to, chatbots (e.g., ChatGPT, Google Bard, Bing Chart), research assistants (e.g., Elicit), and image generators (e.g., Stable Diffusion, Dall-E), etc.

Academic Accommodations

Carleton is committed to providing academic accessibility for all individuals. Please review the academic accommodation available to students here: <u>https://students.carleton.ca/course-outline/</u>.



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Undergraduate Academic Advisor

The Undergraduate Advisors for the School of Computer Science is available in Room 5302HP; or by email at <u>scs.ug.advisor@cunet.carleton.ca</u>. The undergraduate advisors can assist with information about prerequisites and preclusions, course substitutions/equivalencies, understanding your academic audit and the remaining requirements for graduation. The undergraduate advisors will also refer students to appropriate resources such as the Science Student Success Centre, Learning Support Services and Writing Tutorial Services.

You must also read: http://calendar.carleton.ca/undergrad/regulations/academicregulationsoftheuniversity/

Additional Notes

Including the time spent viewing lectures, completing lab problems, and working on other course material, **students can expect to spend at least ten (10) hours per week on this course**. Students are asked to pose all questions related to course content using the official course Discord server. Students should not email the instructor directly unless the question contains confidential information or is of a personal nature.

The instructor will attempt to answer every student inquiry received within 48 hours of the time the message was received, unless the inquiry requests information that has already been addressed in the course outline. All emails regarding the course should be sent from your Carleton email account. To ensure that all announcements are received, **students are expected to check their Carleton email and course Dicsord on a daily basis.**

All materials created for this course (including, but not limited to, lecture notes, in-class examples, tutorial exercises, assignments, examinations, and posted solutions) remain the intellectual property of the instructor. These materials are intended for the personal and non-transferable use of students registered in the current offering of the course. Reposting, reproducing, or redistributing any course materials, in part or in whole, without the written consent of the instructor, is strictly prohibited.

Students are invited to discuss any concerns with the Instructor at the earliest opportunity.