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**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.*

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**Course Information****Instructor Name**

Dave McKenney

**Instructor Email**[david.mckenney@carleton.ca](mailto:david.mckenney@carleton.ca)**Lecture Hours**

Tuesday and Thursday

11:35am-1:25pm

Online

**Course Webpage**<https://culearn.carleton.ca>**Course Discord Server**

Link will be posted on cuLearn

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**Course Delivery**

This course will be delivered in an asynchronous manner. 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 slots will be used for question/answer and assistance with lab assignments. The instructor and TA will be available via Discord during scheduled hours to answer questions and clarify topics. Students will be expected to use an alias that includes their first and last name, as listed on cuLearn, in the course Discord and in any other course meetings or activities (Zoom, etc.).

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**Course Description**

The principal course objective is to have a student create and analyze networks of multimedia 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 social network, 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.

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**Required Textbook**

There will be no required textbook purchase for this course. Readings for the course will be provided from resources available freely on the internet.

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**Assessment Scheme**

Your performance in this course will be assessed using several components. These include assigned in-class lab problems, two assignments, and a course project. Students are allowed to complete each of these components either individually or as a team of two. The grades you achieve on these components will be weighted using the following scheme:

Assigned Lab Problems (10 × 3% each)	30%
Assignments (2 × 20% each)	40%
Project (due April 14 <sup>th</sup> )	30%

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## Course Outline

### Topics Covered

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Below is a summary of topics the course will 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

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#### 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.

#### 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.

#### Academic Accommodations for Students with Disabilities

If you have a documented disability requiring academic accommodations in this course, please contact the Paul Menton Centre for Students with Disabilities (PMC) at 613-520-6608 or [pmc@carleton.ca](mailto:pmc@carleton.ca) for a formal evaluation or contact your PMC coordinator to send your instructor your Letter of Accommodation at the beginning of the term. You must also contact the PMC no later than two weeks before the first in-class scheduled test or exam requiring accommodation (if applicable). After requesting accommodation from PMC, meet with your instructor as soon as possible to ensure accommodation arrangements are made. For more details, visit the [Paul Menton Center website](#).

#### Religious Obligation

Please contact your instructor with any requests for academic accommodation during the first two weeks of class, or as soon as possible after the need for accommodation is known to exist. For more details, visit [the Equity Services website](#).

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### Pregnancy Obligation

Please contact your instructor with any requests for academic accommodation during the first two weeks of class, or as soon as possible after the need for accommodation is known to exist. For more details, visit [the Equity Services website](#).

### Survivors of Sexual Violence

As a community, Carleton University is committed to maintaining a positive learning, working and living environment where sexual violence will not be tolerated, and where survivors are supported through academic accommodations as per Carleton's Sexual Violence Policy. For more information about the services available at the university and to obtain information about sexual violence and/or support, visit: [carleton.ca/sexual-violence-support](http://carleton.ca/sexual-violence-support)

### Accommodation for Student Activities

Carleton University recognizes the substantial benefits, both to the individual student and for the university, that result from a student participating in activities beyond the classroom experience. Reasonable accommodation must be provided to students who compete or perform at the national or international level. Please contact your instructor with any requests for academic accommodation during the first two weeks of class, or as soon as possible after the need for accommodation is known to exist. For more details, [see the policy](#).

### Medical Certificate

The following is a link to the official medical certificate accepted by Carleton University for the deferral of final examinations, midterms, or assignments in undergraduate courses. To access the form, please go to <https://carleton.ca/registrar/wp-content/uploads/Medical-Certificate-Form.pdf>. For more information on academic accommodation, please contact the departmental administrator or visit: [students.carleton.ca/course-outline](http://students.carleton.ca/course-outline)

### Undergraduate Academic Advisor

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The Undergraduate Advisor for the School of Computer Science is available in Room 5302C HP, by telephone at 520-2600, ext. 4364 or by email at [undergraduate\\_advisor@scs.carleton.ca](mailto:undergraduate_advisor@scs.carleton.ca). The undergraduate advisor can assist with information about prerequisites and preclusions, course substitutions or equivalencies, understanding your academic audit and the remaining requirements for graduation. The undergraduate advisor will also refer students to appropriate resources such as the Science Student Success Centre, Learning Support Services and the Writing Tutorial Services.

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

### Additional Notes

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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 email received within 48 hours of the time the message was received, unless the email requests information that has already been addressed in the course Discord server or in

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## Course Outline

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 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.**