DISTRIBUTED COMPUTING
COMP 4001 (August 26, 2019)

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1 CONTACTS

- Evangelos Kranakis, Office 5360 HP, Office hrs Tue & Thu 13:00 to 14:00
- TA (Email) [Office Hours]
  - Ryan Killick (RyanKillick@cmail.carleton.ca) TBA
  - Norbert Eke (NorbertEke@cmail.carleton.ca) TBA
  - Qi Dong (qidong@cmail.carleton.ca) TBA
- TA Office Hours are held in Room HP 5336.

2 COURSE DESCRIPTION

Computational models, communication complexity, design and analysis of distributed algorithms and protocols, fault-tolerant protocols, synchronous computations. Applications may include: communication in data networks, control in distributed system (e.g., election, distributed mutual exclusion), manipulation of distributed data (e.g., ranking).

CONTENTS OF LECTURES

1. Week 01: Sep 06 Introduction; Overview;
2. Week 02: Sep 13 Coloring; Dominating Set; (Assignment A)
3. Week 03: Sep 20 ID Selection; Leader Election 1;
4. Week 04: Sep 27 Leader Election 2;
5. Week 05: Oct 11 Search, Evacuation (Assignment B)
6. Week 06: Oct 18 Connections (Test 1: Oct 18)
   Oct 21-25 Fall Break
7. Week 07: Nov 01 Locality;
8. Week 08: Nov 08 Broadcasting;
9. Week 09: Nov 15 Trees in DC; (Assignment C)
10. Week 10: Nov 23 Message Passing;
11. **Week 11: Nov 29** Fault Tolerance;
12. **Week 12: Dec 06** Shared Memory;

NB: Material covered in lectures may vary depending on time available.

# 3 STUDENT REQUIREMENTS

Following are the requirements for the course.

## GRADING & COURSE WORK

<table>
<thead>
<tr>
<th>Type of Test</th>
<th>#</th>
<th>% Each</th>
<th>% Total</th>
<th>Where</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assignments</td>
<td>3</td>
<td>10%</td>
<td>30%</td>
<td>Homework</td>
</tr>
<tr>
<td>Test 1 (60 min)</td>
<td>1</td>
<td>30%</td>
<td>30%</td>
<td>In Class</td>
</tr>
<tr>
<td>Test 2 (90 min)</td>
<td>1</td>
<td>40%</td>
<td>40%</td>
<td>TBA</td>
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## TESTS

No Books/Notes/Computing Devices of any kind allowed during the tests/quizes!

- TEST 1: you should study everything that we covered in class up to and including the last lecture prior to test 1.
- TEST 2: you should study everything that we covered in class from test 1 up to and including the last lecture prior to test 2.

## Additional Details & Requirements

1. All assignments are compulsory and must be uploaded to the course web site in CU Learn on the due date no later than 12 noon. Submit only in pdf format (DO NOT SUBMIT zip, wordperfect, etc.) It is preferable for the assignments to be typed and an additional point will be added to each assignment, if properly typed.
2. Late assignments will not be accepted. The assignments-mark will be averaged over the remaining assignments if there is a serious reason (like, health problem) in which case a written certificate from the appropriate authority is required. Typed and (mathematically) nicely and rigorously presented assignments will receive a 10% bonus on the allocated mark. Missing assignments are worth 0%.
3. Plagiarism will not be tolerated. You must always write up the solutions to assignment problems on your own and acknowledge your sources in case you used library material. On the first occasion, plagiarizing an assignment will result in assigning a 0 to all the students involved and continuation of this practice may have severe repercussions for the student(s) involved.
4. Avoid posting code and/or solutions of assignments online on github and other places in the cloud. Students posting their code and/or solutions assignments online are making themselves a potential party to plagiarism. Other students have found that code and plagiarized their assignments and projects.

5. Make-up tests are not possible. In case of absence from a test and in order to average your mark over the remaining exams a written certificate from the appropriate authority is required, else you will receive 0%. If certificate is approved then an oral test will be given.

6. Remarking of individual questions in a test is not possible; the whole test will be remarked, in which case your grade for this test may either increase or decrease.

4 USEFUL BOOKS (Not Required)

Your study should be based on the lecture notes as well as additional material provided. Although I will not follow the books below you can use them as a guide for supplementary material and further study.


You can purchase the books either from any commercial bookstore. Use also information available in the internet or in numerous other books.