DISTRIBUTED COMPUTING  
COMP 4001 (September 7, 2018) 

Evangelos Kranakis  
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1 CONTACTS  
• Evangelos Kranakis, Office 5360 HP, Office hrs Tue & Thu 14:45 to 15:45  
• TA (Email) [Office Hours]  
  – Ryan Killick (RyanKillick@cmail.carleton.ca) [Wed 15:00 to 17:00]  
  – Norbert Eke (NorbertEke@cmail.carleton.ca) [Fri 14:30 to 16:30]  
• 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 10 Introduction; Overview;  
2. Week 02: Sep 17 Coloring; Dominating Set; (Assignment A)  
3. Week 03: Sep 24 ID Selection; Leader Election 1;  
4. Week 04: Oct 01 Leader Election 2;  
   Oct 08 Thanksgiving Holiday  
5. Week 05: Oct 15 Search, Evacuation (Assignment B)  
   Oct 22-26 Fall Break  
6. Week 06: Oct 29 Connections (Test 1: Oct 29)  
7. Week 07: Nov 05 Locality;  
8. Week 08: Nov 12 Broadcasting;  
9. Week 09: Nov 19 Trees in DC; (Assignment C)  
10. Week 10: Nov 26 Message Passing;
11. **Week 11: Dec 03** Fault Tolerance;
12. **Week 12: Dec 05** 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>
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<td>TBA</td>
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#### TESTS

No Books/Notes/Computing Devices of any kind allowed during the tests/quiz(es)!

- **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. 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. 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.
5. Remark ing 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.