**CMSC 389O**
**The Coding Interview**
Spring 2019

# Course Description

This course provides a comprehensive, practical introduction to technical interviews. The course will start with basic topics such as Big O and String Manipulation. We will then move into more complex topics such as Graphs and Dynamic Programming. Most of the classes will be in-class interviews to give real interview practice.

# Course Details

**Prerequisites:** Minimum grade of C- in CMSC216 and CMSC250

**Recommended co-requisite:** CMSC351

**Credits:** 1

**Seats per Section:** 30

**Language(s):**
**Submit Server homeworks:** Choice of Python, Java
**Interviews (assessments):** Choice of Python, Java (guaranteed); C, C++, C#, Scala, Ruby, Ocaml, Rust, etc. (dependent on interviewer)
Python is strongly recommended for technical interviews (and also for this class) for brevity

**Textbook (recommended):**
Cracking the Coding Interview by Gayle Laakmann McDowell

**Supplementary Material:**

| | |
|---|---|
| All topics | Elements of Programming Interviews by Adnan Aziz, Tsung-Hsien Lee, Amit Prakash |
| Big O | Competitive Programmer's Handbook sec. 2.2, 2.3 (free online book) by Antti Laaksonen |
| Sys. Design | System Design Primer (open-source repository) |

**Time and Location:**

| Section | Time | Location |
|---|---|---|
| 0101 | 11:00am | ESJ B0320 |
| 0201 | 12:00pm | ESJ 1309 |
| 0301 | 12:00pm | ESJ B0320 |
| 0401 | 1:00pm | ESJ 1309 |

**Contact:**

We will interact with students outside of class in primarily two ways: ELMS announcements and our class email CMSC389O@gmail.com. If you have any questions, comments, concerns please email us at CMSC389O@gmail.com.

Please use the subject line `<Description> [TAs wanted]`.

For example, if you are in section 0401 and are missing class because of an interview, an appropriate subject line would be `Interview conflicting with class 10/5 [Maria, Nelson, Tim]`. If you are emailing about setting up a mock interview with any of the TAs or have a question that is relevant to all TAs please use `[All]`.

ELMS will be used primarily for announcements; if you need to message us for any reason, please use email.

**Course Facilitator(s):**

| Head TA | Maria McCulley | mmccull2@umd.edu |
|---|---|---|
| 0101 | Anna Keleher | keleherblue@gmail.com |
| 0101 | Katherine Chase | katherine.m.chase@gmail.com |
| 0201 | George Tong | gjtong@umd.edu |
| 0201 | Kusal De Alwis | kdealwis@umd.edu |
| 0301 | Atharva Bhat | dhruvnm2@gmail.com |
| 0301 | Dhruv Mehta | abhat98@gmail.com |
| 0401 | Nelson Le | nle@umd.edu |
| 0401 | Tim Chen | hello@timothychen.me |

**Faculty Advisor:** Tom Goldstein tomg@umd.edu

# Schedule

See table 1 for the weekly schedule.

Please note if you have any questions about a particular weeks pre-lecture activity, lecture activity, homework, or extra credit, the point people for that topic are the best people to answer your question.

# Grading

Grades will be maintained on ELMS. You will be responsible for all material discussed in lecture as well as other standard means of communication (ELMS announcements, email, etc). This includes deadlines, policies, and assignment changes.

Any request for reconsideration of any grading on coursework must be submitted within one week of when it is returned. No requests will be considered afterward.

Your final course grade will be determined according to the following percentages. **Ten (10) extra credit opportunities will be provided throughout the semester. In aggregate, the assignments can boost your grade up to 5%.**

| Wk | Date | Topic | Point People |
|----|------|-------|--------------|
| 1 | 2019-02-01 | Introduction / Ideal Interview | Maria |
| 2 | 2019-02-08 | Array / String Manipulation | Kusal, Tim |
| 3 | 2019-02-15 | Inheritance | Nelson, Tim |
| 4 | 2019-02-22 | Sorting & Searching | Dhruv, Atharva |
| 5 | 2019-03-01 | Linked Lists | Nelson, Katherine |
| 6 | 2019-03-08 | Review Day | Maria |
| 7 | 2019-03-15 | **CMSC389O Midterms Week** | |
| 8 | 2019-03-22 | **Spring Break** | |
| 9 | 2019-03-29 | Graphs | Atharva, Kusal |
| 10 | 2019-04-05 | Trees & Tries | Blue, Kusal |
| 11 | 2019-04-05 | Dynamic Programming | Katherine, Dhruv |
| 12 | 2019-04-05 | System Design | Nelson, George |
| 13 | 2019-04-05 | Jeopardy (Technical concepts / trivia) | George, Blue |
| 14 | 2019-05-03 | **CMSC389O Finals Week I** | |
| 15 | 2019-05-10 | **CMSC389O Finals Week II** | |
| 16 | 2019-05-17 | **Final Exams Week** | |

Table 1: Schedule for the semester, broken down by week

## Class Participation (30%)

Most Classes will consist of in-class partner interviews. **Showing up more than 5 minutes late will result in a grade of 0 for participation for that class period.** Students with excused absences will not be penalized for missing class. Please see below for absences policy. **Students with special circumstances, such as a far-away previous class, should speak with instructors on the first day.**

## Pre-Lecture Videos/Quizzes (10%)

Students will be responsible for watching pre-lecture videos and completing pre-lecture quizzes or activities to demonstrate their understanding of the content in the videos.

## Homework (20%)

Weekly homework assignments will consist of solving coding interview questions and submitting solutions to the UMD CS submit server. Student swill be graded on passing test cases, on the time and space complexities of their solution, and on completion of a short write-up regarding their solution. *Note that these are not mutually exclusive: solutions with higher time/space complexities may fail to pass some tests on the submit server — this is intentional.*

   **Homeworks will be accepted up to 24 hours after the deadline, with a 20% deduction in credit. No homework will be accepted more than 24 hours late.**

**Midterm — Interview (20%)**

The midterm will be a 30-minute Google Hangout technical interview with one of the student facilitators. Students will be expected to solve 1–2 coding questions and have a brief conversation about their experiences and skills.

**Final — Interview (20%)**

The final will be a 45-minute Google Hangout or in-person (students choice) technical interview with one of the student facilitators. Students will be expected to solve 1–2 coding questions and have a brief conversation about their experiences and skills.

# Excused Absence and Academic Accommodations

See the section titled "Attendance, Absences, or Missed Assignments" available at Course Related Policies. **Note that absences due to internship/job interviews will be excused.**

# Disability Support Accommodations

See the section titled "Accessibility" available at Course Related Policies.

# Academic Integrity

Note that academic dishonesty includes not only cheating, fabrication, and plagiarism but also includes helping other students commit acts of academic dishonesty by allowing them to obtain copies of your work. In short, all submitted work must be your own. Cases of academic dishonesty will be pursued to the fullest extent possible as stipulated by the Office of Student Conduct. It is very important for you to be aware of the consequences of cheating, fabrication, facilitation, and plagiarism. For more information on the Code of Academic Integrity or the Student Honor Council, please visit https://www.shc.umd.edu/.

Also note that any "hard coding" in a homework assignment may result in a score of zero for that assignment. Hard coding refers to attempting to make a program appear as if it works correctly, when in fact it does not. One example of hard coding would be printing the desired output instead of computing it. This is only one example, and if you have any questions as to what constitutes hard coding, be sure to ask ahead of time.

# Course Evaluations

If you have a suggestion for improving this class, don't hesitate to tell theinstructor or TAs during the semester. At the end of the semester, please do not forget to provide your feedback using the campus-wide CouseEvalUM system. Your commends will help make this class better.

# Notes

Syllabus subject to change.