

# CS 395: Technical Interview Preparation

## Fall 2021

### Contact Information

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### Course Description

CS 395: Student Initiated Special Topics are 1-credit courses that cover special and emerging topics of interest to computer science undergraduates. Lectures are guided by student facilitators under faculty advisement.

This course will prepare students to perform well in technical interviews for CS-related positions. We will review technical concepts such as Big O analysis, data structures, and search/sort algorithms with the context of solving interview code questions. This course will also go over preparation steps and soft skills for standing out as a candidate. Students will develop and evaluate their understanding through problem-solving exercises, assigned readings with quizzes, lecture, discussions, mock interviews, and a final exam.

*This is a 10 week course.*

### Course Outcomes

Upon completion of this course, students should:

- Be able to approach technical interview questions and articulate their thought process.
- Demonstrate a strong understanding of key data structures and algorithms that can be applied to solving technical interview problems.
- Be able to analyze and discuss runtime complexity and trade-offs.
- Be able to effectively communicate their experience and skills during a technical interview.
- Have confidence in technical interview performance from practicing in mock interviews.

### Prerequisite

Required Prerequisite: Grade of C or better in CS 310.

### Textbook

**(Required)** Cracking the Coding Interview: 189 Programming Questions and Solutions 6th Edition by Gayle Laakmann McDowell

(Supplementary, available for GMU students on Safari Books) [Cracking the Tech Career: Insider Advice on Landing a Job at Google, Microsoft, Apple, Or Any Top Tech Company by Gayle Laakmann McDowell](#)

## Grading Policy

Quizzes - 10%

Class Participation - 40% (In-Class Assignments 50%, Take-Home Assignments 30%, Discussion Board 20%)

Midterm - 20%

Final - 30%

Contesting of grades on any/all submissions must be requested within one week of the item's return. No grade changes will be considered subsequent to that deadline, or after the final exam meeting.

## Honor Code

All students are expected to abide by the [GMU Honor Code](#) and the [CS Department Honor Code](#). This policy is rigorously enforced. All class-related assignments are considered individual efforts unless explicitly expressed otherwise (in writing). Review the university honor code and present any questions regarding the policies to instructor. Cheating on any assignment will be prosecuted and result in a notification of the Honor Committee as outlined in the GMU Honor Code.

## Disability Accommodations

Students with a learning disability or other condition (documented with [GMU Office of Disability Services](#)) that may impact academic performance should speak with the faculty advisor ASAP to discuss accommodations.

## Schedule

Week	Date	Topic	Assignment
1	08/23-08/29	Course Overview, Understanding the Technical Interview, Resume/Pitch  Read: CCI pages 4-7 and 26-31	Assigned: <ul style="list-style-type: none"><li>● Resume and Personal Pitch</li><li>● Discussion Post</li><li>● Pre-Assessment Quiz</li><li>● Watch videos on Strings, Arrays, Arraylists, Hash Tables</li></ul> Assignment #1 posted, due by end of Week 4
2	08/30-09/05	Coding Problem Guidelines, Arrays and Strings  Read: CCI pages 60-81 and 88-90	Assigned: <ul style="list-style-type: none"><li>● Work on Assignment #1</li><li>● Quiz on Week 2 Readings</li><li>● Watch videos on Big O and LinkedLists</li></ul>
3	09/06-09/12	Big O Analysis and LinkedLists  Read: CCI pages 38-55 and 92-94	Assigned: <ul style="list-style-type: none"><li>● Work on Assignment #1</li><li>● Quiz on Week 3 Readings</li><li>● Watch videos on Stacks and Queues</li></ul>
4	09/13-09/19	Behavioral Questions, Stacks and Queues  Read: CCI pages 32-37 and 96-98	Assigned: <ul style="list-style-type: none"><li>● Complete Assignment #1 due Sunday</li><li>● Sign up for Mock Phone Interview time slot</li></ul>

			<ul style="list-style-type: none"> <li>• Prepare for Midterm assessment + interview</li> <li>• Quiz on Week 4 Readings</li> <li>• Watch videos on Object Oriented Programming and Design</li> </ul>
5	09/20-09/26	Object Oriented Programming (OOP) Concepts & Design structure  Read: CCI pages 125-127	MIDTERM: Mock Phone Interview Assigned: <ul style="list-style-type: none"> <li>• Quiz on Week 5 Readings</li> <li>• Watch videos on Trees and Graphs</li> </ul> Assignment #2 posted, due by end of Week 9
6	09/27-10/03	Trees and Graphs  Read: CCI pages 100-109	Assigned: <ul style="list-style-type: none"> <li>• Work on Assignment #2</li> <li>• Quiz on Week 6 Readings</li> <li>• Watch videos on Sorting and Searching</li> </ul>
7	10/04-10/10	Sorting and Searching  Read: CCI pages 146-149	Assigned: <ul style="list-style-type: none"> <li>• Work on Assignment #2</li> <li>• Quiz on Week 7 Readings</li> <li>• Watch videos on Recursion and Dynamic Programming</li> </ul>
8	10/11-10/17	Recursion and Dynamic Programming  Read: CCI pages 130-131	Assigned: <ul style="list-style-type: none"> <li>• Work on Assignment #2</li> <li>• Quiz on Week 8 Readings</li> <li>• Watch videos on Job Search Tips</li> </ul>
9	10/18-10/24	Final Review, Searching for Opportunities, How to Stand Out	Assigned: <ul style="list-style-type: none"> <li>• Sign up for Final Interview time slot</li> <li>• Complete Assignment #2 due Sunday</li> <li>• Watch videos on Final Exam Logistics/Review</li> </ul>
10	10/25-10/31	Final Exam and Interviews	FINAL: Exam and 45-minute Mock Interview