| | |
|---|---|
| **Classes:** | T 8:00 – 9:15 (AOC2 240) |
| | For this hybrid course, the F2F portion will be accomplished via **Remote Synchronous Instruction.** Class meetings will take place synchronously on *Teams* in the online environment. Students may participate in the class from a remote location or on campus in a classroom or other designated academic space. |
| **Instructor:** | Dr. Erin Rickard |
| | AOC2 220 |
| | hrickard@coastal.edu |
| | (843) 349-2098 |
| **Office hours:** | *Teams* – Mon, Wed 1:00 – 3:00, Tue 10:00 – 12:00 |
| | Additional times available by appointment. |
| **Prerequisites:** | Grade of **C** or better in CSCI 145 or CSCI 150/150L, and MATH 174. |
| **Text/s:** | T. H. Cormen, C. E. Leiserson, R. L. Rivest, and C. Stein, *Introduction to Algorithms, Third Edition*. Cambridge, MA: The MIT Press, 2009. |
| **Description:** | Topics include analysis of algorithms, with emphasis on computational complexity and advanced algorithms including self-adjusting trees, hashing, graphs, sorting, searching, and greedy algorithms. |
| **Grading:** | Grades will be based on assignments, tests, and a comprehensive final exam. |

| WEIGHTS | | | SCALE | | | |
|---|---|---|---|---|---|---|
| 20% | Assignments | A | [90, 100] | C | [70, 77) | |
| 60% | Exams | B+ | [87, 90) | D+ | [67, 70) | |
| 20% | Final Exam | B | [80, 87) | D | [60, 67) | |
| | | C+ | [77, 80) | F | [0, 60) | |

**In addition, mid-term grades for all 100- and 200-level classes will be provided.**

**Important dates:**

| | |
|---|---|
| Sep 7 | Labor Day Holiday |
| Oct 9 | Last day to withdraw |
| Nov 3 | Election Day – no classes |
| Nov 23 - 28 | Thanksgiving Break |

**Course Objectives:**
To provide students with the skills necessary to evaluate, implement, and utilize computer algorithms and data structures efficiently.
To provide students with experience in problem formulation, implementation, and evaluation.

**Course Student Learning Outcomes**
Upon successful completion of this course, students should be able to
1. Analyze an algorithm with respect to computational complexity.
2. Analyze basic abstract data types, such as lists, stacks and queues.
3. Evaluate fundamental data structures, including trees and hash tables.
4. Apply and compare the principal algorithms for sorting.
5. Demonstrate an understanding of graphs and their applications.
6. Perform problem-solving tasks in a team environment.

**Performance Indicators**
Upon successful completion of this course, students should be able to
1.3. Evaluate solutions to mitigate or solve a problem.
1.4. Identify solutions to a problem by applying principles of computing and/or other relevant disciplines.
5.2. Participates in group activities according to expectations.
CS6.3. Evaluate how time/space constraints affect design.

**Mapping of Course SLOs to Performance Indicators**

| Course SLO | Performance Indicators | | | |
|---|---|---|---|---|
| | 1.3 | 1.4 | 5.2 | CS6.3 |
| 1 | | | | X |
| 2 | | X | | |
| 3 | | X | | |
| 4 | X | | | |
| 5 | | X | | |
| 6 | | | X | |

**ABET Student Learning Outcomes**
SLO 1 - Analyze a complex computing problem and to apply principles of computing and other relevant disciplines to identify solutions.
SLO 2 - Design, implement, and evaluate a computing-based solution to meet a given set of computing requirements in the context of the program's discipline.
SLO 3 - Communicate effectively in a variety of professional contexts.
SLO 4 - Recognize professional responsibilities and make informed judgments in computing practice based on legal and ethical principles.
SLO 5 - Function effectively as a member or leader of a team engaged in activities appropriate to the program's discipline.
SLO 6 [CS] - Apply computer science theory and software development fundamentals to produce computing-based solutions.
SLO 6 [IS] - Support the delivery, use, and management of information systems within an information systems environment.
SLO 6 [IT] - Identify and analyze user needs and to take them into account in the selection, creation, integration, evaluation, and administration of computing-based systems.

**Streaming and Recording Course Meetings**
To make this course accessible to all students, I will be livestreaming our course meetings. I will also record (some) course meetings and post the recordings on Moodle as time permits.

**CCU Academic Continuity Plan**
If normal class and/or lab activities are disrupted due to illness, emergency, or crisis situation, the syllabus and other course plans and assignments may be modified to allow completion of the course. If this occurs, an addendum to your syllabus and/or course assignments will replace the original materials. In the event of hazardous weather, students are requested to listen to local radio and television stations or visit the Coastal Carolina University website for official University closing announcements. Announcements about hazardous weather are posted on the University's homepage.

**Class Attendance**
- Attendance is expected for all scheduled class meetings. University policy states that a grade of F may be assigned for any noted absences (excused or unexcused) in excess of 25% of regularly scheduled class meetings. Attendance will be recorded at the beginning of every class.
- In the event you must miss class, it is your responsibility to obtain missed material from classmates and know all administrative announcements.
- Arrangements must be made ***well in advance*** if for some legitimate reason you cannot take an exam at the scheduled time. Failure to notify the instructor well in advance or address any matters of proof will result in a 0 on a missed test. Make-up exams will only be given in VERY extenuating circumstances.

**Health-Related Class Absences**
Please evaluate your own health status regularly and refrain from attending class and other on-campus events if you are ill. Students who miss class due to illness will be given opportunities to access the course online. You are encouraged to seek appropriate medical attention for treatment of illness. In the event of contagious illness, please do not come to class or to campus to submit work or meet with me. Instead, notify me by email about your absences as soon as possible, so that accommodations can be made. Please note that documentation for excused absences may be required. However, you should not come to class if you are feeling sick, even if you have not seen a doctor.

**Classroom Behavior**
- Audible devices (i.e., cell phones) must be silenced before class begins.
- Students must conduct themselves in a manner which is conducive to learning for themselves and others. Disruptive behaviors are not acceptable, will result in the student being asked to leave the classroom, and will affect the student's final grade.

**Academic Honesty**

- Cheating and plagiarism are serious offenses that will not be tolerated. Examples of plagiarism, cheating, attempted cheating and other forms of academic dishonesty are described in "Prohibited Conduct", Section III.D of the *Coastal Carolina University, Code of Student Conduct*. The instructor's decision as to whether to report a student for a possible violation of academic honesty on an assignment depends on a variety of factors including the intent of the assignment and the behavior of the student. Two general guidelines will be used in making the decision:
  - Program plagiarism will be suspected if an assignment that calls for individual work results in two or more programs so similar that one can be converted to another by purely mechanical transformations. The same is true for assignment plagiarism.
  - Cheating will be suspected if a student who was to complete an assignment independently cannot explain both the intricacies of his/her solution and the techniques used to generate that solution.
- Any violation of academic integrity will be resolved according to the "Resolution Process for Academic Violations" as described in Section III.E of the *Coastal Carolina University, Code of Student Conduct*. Any student found in violation faces a grade of FX in the course, disciplinary suspension or permanent dismissal from the University.

**Accessibility & Disability Services**

Coastal Carolina University is committed to equitable access and inclusion of individuals with disabilities in accordance with the Americans with Disabilities Act and Section 504 of the Rehabilitation Act. Individuals seeking reasonable accommodations should contact Accessibility & Disability Services (843-349-2503 or https://www.coastal.edu/disabilityservices/).

**If you stream from a classroom on campus…**

**Face Coverings**

"Face coverings are required indoors at all times and outdoors when physical distancing is not possible. CCU requires all students to wear face masks or cloth face coverings in classrooms, laboratories, and other instructional spaces. Compliance with the face-covering protocol is expected. If you do not comply with a classroom rule, you may be asked to leave class and/or reported to the Dean of Students Office. If you forget your mask, or if your mask breaks on your way to class, there are disposable masks available for your use."

"Individuals whose unique and individual circumstances require an exception to the face covering requirement, as indicated by a medical professional, may request an exception in accordance with campus ADA policies. Contact the Office of Accessibility and Disability Services at 843-349-2503 or disability@coastal.edu. Appropriate accommodations relating to class modality and social distancing will be evaluated and implemented based on the student's needs."

"A portion of the grade for this course is directly tied to your participation in this class. Successful participation is defined as consistently adhering to expectations and requirements in this syllabus. I expect you to wear a mask that covers your mouth and nose."

"We know from existing data that wearing a mask in public can help prevent the spread of SARS-CoV-2, which causes COVID-19, in the community (Lyu & Wehby, 2020; CDC, 2020; Johns Hopkins Medicine, 2020). In accordance with the Office of the Commissioner of Higher Education and guidance from the Centers for Disease Control and Prevention (CDC), CCU has determined that everyone will be required to wear a face mask in university buildings, including classrooms. This requirement includes wearing a mask appropriately (i.e., covering both your mouth and nose)."

Lyu, W. and Wehby, G. L. Community Use Of Face Masks And COVID-19: Evidence From A Natural Experiment Of State Mandates In The US Health Affairs 0 0:0 doi: 10.1377/hlthaff.2020.00818

Centers for Disease Control and Prevention. (July 16, 2020)

Recommendation Regarding the Use of Cloth Face Coverings, Especially in Areas of Significant Community-Based Transmission. Retrieved on July 22, 2020.

Maragakis, L. L. Coronavirus Face Masks & Protection FAQs. (Updated July 2, 2020) Retrieved from the Johns Hopkins Health website on July 22, 2020.

**Classroom Sanitization**

"Our classroom has a Sanitation Station that is stocked with cleaners and sanitizers. When you enter the classroom, please use the spray and/or wipes to clean your workspace. The Sanitation Station also includes hand sanitizer and disposable masks in case you forget your own face covering. These disposable masks are finite in supply, so please take one only when necessary!"

"If your personal or health circumstances change and you would like to change the way you attend the class (from streaming to in-person or vice versa), you may do so. However, you must provide me with 48-hours' notice of this change via email, excepting documented emergencies, so that I can track accurately your attendance and course participation. You should also change your in-person vs. virtual preference in WebAdvisor."