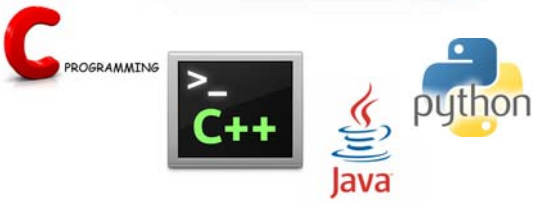
CS 370: Creative Problem Solving and Team Programming, Spring 2018



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Course Overview:
CS 370 is a course that focuses on refining problem-solving and coding skills so that the student can devise solutions to problems featured on various online judges. The first half of the course will enable the student to learn brute-force, hashing, sorting, transform-and-conquer, greedy, and dynamic programming approaches to assigned problems. After midterm, students will have the opportunity to select and solve problems on their own and present their solutions to the class. As a result, students are also expected to improve their presentation and communication skills over the course of the semester.

In this course students will learn primarily through experimentation. While the instructor will provide short lessons and code walk-throughs to help the class, students will benefit by trying diligently to solve the selected problems.

Online judges used in this course include but are not limited to:

- Project Euler [projecteuler.net]
- Sphere Online Judge [www.spoj.com]
- Hacker Rank [www.hackerrank.com]
- UVa Online Judge [uva.onlinejudge.org]
- ACM-ICPC Live Archive [icpcarchive.ecs.baylor.edu]
- USACO Training Program Gateway [cerberus.delosent.com:791/usacogate]
- Matasano Crypto Challenges [cryptopals.com]
- URI Online Judge [https://www.urionlinejudge.com.br/judge/login]

Course Outcomes:
To assess student progress we focus on key skills that can be demonstrated. Below is the list of course outcomes to be achieved by the end of the semester:

1. Translate a wide variety of algorithmic techniques into efficient programs.
2. Choose among algorithmic techniques, selecting the one that best fits a given problem.
3. Implement efficient solutions to problems using various high-level languages.

4. Create good test cases.
5. Publicly present algorithm and program design.
6. Work effectively in a team.

Grading Breakdown:
The course score will be made up of a minimum of 6 assessments, each of which are given equal weight. The assessments can include any combination of:

- Programming assignments
- Input/output test sets for problems
- Solution write-ups [description of approach]
- Written presentations [PowerPoint, Prezi, etc.]
- Oral presentations

There are no exams in this course.

Policies and Grading:

- You, your instructor, and the CAs are bound by the Stevens Honor System. Students are responsible for reading and understanding the course policies in this syllabus and for announcements made in class and in the course email list.
- Since this course involves computer programming, copying from others (online or classmates) results in an automatic zero for the assignment and additional possible penalties (including course failure and/or escalation to the honor board). The premise of this course is for you to refine your skills. Copying does NOTHING for you.
- Notebook computers should be brought to class each week.
- During lecture please refrain from using mobile phones or otherwise being impolite.
- The course score is on a scale of 100 and letter grades (including plusses and minuses). In addition to the grading breakdown provided above, effort and progress may be taken into account when computing your final grade. Final letter grades may be scaled according to class-wide grade clustering.
- Attendance will be taken each week.
- Programming assignments will be accepted late with a 2% penalty for each hour past the deadline. This does not apply to presentations. If you are absent for a scheduled presentation, you will receive a 0 for that assignment.
- Group work is allowed, but you should not work with anyone outside your group. We want to see a diverse set of solutions, and if everyone works together, there will be no diversity of thought.

Communication:

- As in all of my courses, you are more than welcome to ask me questions as often as you want, and I will always be happy to help.
- The amount of help provided will be directly proportional to the amount of time left before the deadline. Please don't wait until the day before an assignment is due to see me; it'll be too late for me to provide help and too late for you to truly learn the material.

Undergraduate Honor System

- Enrollment into the undergraduate class of Stevens Institute of Technology signifies a student's commitment to the Honor System. Accordingly, the provisions of the Stevens Honor System apply to all undergraduate students in coursework and Honor Board proceedings. It is the responsibility of each student to become acquainted with and to uphold the ideals set forth in the Honor System Constitution (Links to an external site.). More information about the Honor System including the constitution, bylaws, investigative procedures, and the penalty matrix can be found online at http://web.stevens.edu/honor/ (Links to an external site.)
- The following pledge shall be written in full and signed by every student on all submitted work (including, but not limited to, homework, projects, lab reports, code, quizzes and exams) that is assigned by the course instructor. No work shall be graded unless the pledge is written in full and signed.

  "*I pledge my honor that I have abided by the Stevens Honor System*."

Reporting Honor System Violations

- Students who believe a violation of the Honor System has been committed should report it within ten business days of the suspected violation. Students have the option to remain anonymous and can report violations online at www.stevens.edu/honor (Links to an external site.).

LEARNING ACCOMODATIONS

Stevens Institute of Technology is dedicated to providing appropriate accommodations to students with documented disabilities. The Office of Disability Services (ODS) works with undergraduate and graduate students with learning disabilities, attention deficit-hyperactivity disorders, physical disabilities, sensory impairments, psychiatric disorders, and other such disabilities in order to help students achieve their academic and personal potential. They facilitate equal access to the educational programs and opportunities offered at Stevens and coordinate reasonable accommodations for eligible students. These services are designed to encourage independence and self-advocacy with support from the ODS staff. The ODS staff will facilitate the provision of accommodations on a case-by-case basis.

Disability Services Confidentiality Policy

Student Disability Files are kept separate from academic files and are stored in a secure location within the Office of Disability Services. The Family Educational Rights Privacy Act (FERPA, 20 U.S.C. 1232g; 34CFR, Part 99) regulates disclosure of disability documentation and records maintained by Stevens Disability Services. According to this act, prior written consent by the student is required before our Disability Services office may release

disability documentation or records to anyone. An exception is made in unusual circumstances, such as the case of health and safety emergencies.

For more information about Disability Services and the process to receive accommodations, visit https://www.stevens.edu/office-disability-services. If you have any questions please contact: Phillip Gehman, the Director of Disability Services Coordinator at Stevens Institute of Technology at pgehman@stevens.edu or by phone (201) 216-3748.

INCLUSIVITY

Name and Pronoun Usage

As this course includes group work and in-class discussion, it is vitally important for us to create an educational environment of inclusion and mutual respect. This includes the ability for all students to have their chosen gender pronoun(s) and chosen name affirmed. If the class roster does not align with your name and/or pronouns, please inform the instructor of the necessary changes.

Inclusion Statement

Stevens Institute of Technology believes that diversity and inclusiveness are essential to excellence in academic discourse and innovation. In this class, the perspective of people of all races, ethnicities, gender expressions and gender identities, religions, sexual orientations, disabilities, socioeconomic backgrounds, and nationalities will be respected and viewed as a resource and benefit throughout the semester. Suggestions to further diversify class materials and assignments are encouraged. If any course meetings conflict with your religious events, please do not hesitate to reach out to your instructor to make alternative arrangements.

You are expected to treat your instructor and all other participants in the course with courtesy and respect. Disrespectful conduct and harassing statements will not be tolerated and may result in disciplinary actions.