CS 658 Algorithm II-CRN 13251
Syllabus and Information

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General Information

Contact Your Instructor

Name: *Arash Rafiey*
Email: *arash.rafiey@indstate.edu*
Phone: *8122415469*
Office: *Root Hall A-140E*

Lecture, Exam, Office Hours

Lecture: *Tuesdays and Thursdays / 3:30pm – 4:45 pm, Root Hall 019*
Exam: TBA
Instructor Office Hours: *TTh 11:30pm – 12:30 pm, Root Hall A-140E*
Course website: All lectures and assignments will be posted on blackboard.

Prerequisites

CS 600, 558 for graduate students.

Recommended text

Algorithm Design, J. Kleinberg, É. Tardos, Addison Wesley, 2006, 9780321295354

Introduction to Algorithms (3rd Edition), T.H. Cormen, C.E. Leiserson, R.L. Rivest, C. Stein, MIT Press, 2009, 9780262033848

Course Announcements

Announcements regarding the course will be made both during class and via email to your @sycamores.indstate.edu email address. You should regularly check this email account or have it forwarded to an account that you check regularly.

Classroom conduct

You may not use cell phones, iPods/music players, etc. during class. You should be civil and respectful to both the instructor and your classmates, and you should arrive to class a few minutes before the scheduled lecture so you are ready for lecture to begin on time. You may use your computer during class if you are using it to follow along with the examples that are being discussed. You may not check email, facebook, work on other courses, etc. during class.

Course Description

The catalog description for this course is

"Analysis and design of data structures for graph search algorithms. A selected topics on NP-complete problems, approximation algorithms, randomized algorithms, and fixed parameterized algorithms."

Instructor's Objective

The objective of this course is to introduce concepts and problem-solving techniques that are used in the design and analysis of efficient algorithms. This is done by studying various algorithms and data structures.

General Course Outline

- Graph search algorithms (Greedy) BFS, DFS, Dijkstra's, Kruskal's, and Prim's (Review)
- Dynamic programing algorithms and their analysis
- Network Flow and Matching algorithms
- NP-completeness
- Approximation Algorithms
- Fixed Parameterized Algorithms

Grading and Assignments

The students of this course have the following responsibilities: complete homework assignments, take the midterm and the final exam. There is an optional project.

The final grade consists of:

- **2 Assignments and 2 Presentation : 40% total**.
    - You may talk with other students about the assignments. But you must list the names of these students at the top of your assignment and you must write up your assignments separately. **Copying is not permitted**.
    - Any other source, eg. books/websites, must be referenced at the top of the assignment. **Copying is not permitted**.
    - **If you worked alone,** write "I worked alone." at the top of your assignment.
    - **You are encouraged to write your assignment using latex.** Guides to using latex can be found here. (The lab computers have latex, but you may need to download it to your own computers otherwise.)
- **Midterm: 20% total**.
- **Final**: **40% total.**

Late Homework

All homework assignments will be given a due date. Assignments turned in 24 hours past the deadline will have their value multiplied by 0.8. If your assignment is more than 24 hours late, it won't be accepted.

Grade Cutoffs

A+   90 – 100
A   85 – 89
A-   80 – 84

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B+    75 – 79
B     70 – 74
B-    65 – 69
C+    60 – 64
C     55 – 59
F      0 – 54
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Blackboard

The course has a blackboard site. Click https://blackboard.indstate.edu/ to go to blackboard. You should see this course listed under your courses for the current term. The blackboard site is only used for giving you your grades. All course content, schedule, etc. will be posted on the course website.

Academic Integrity

Please follow these guidelines to avoid problems with academic misconduct in this course:

- **Homework:** You may discuss the homework assignments, but should solve and finish them on your own.

- **Note on sources:** if you use some other source, the web or whatever, you better cite it! Not doing so is plagiarism.

- **Exams:** No cheating during exams. The exams will be closed-book, closed-notes, no computer, and no calculator.

If cheating is observed, you will at the least receive a 0 for the assignment (and may receive an F for the course), and I will file a Notification of Academic Integrity Violation Report with Student Judicial Programs, as required by the university's policy on Academic Integrity. A student who is caught cheating twice (whether in a single course or different courses) is likely to be brought before the All-University Court hearing panel, which can impose sanctions up to and including suspension/expulsion. See the http://www.indstate.edu/sjp/docs/code.pdf and http://www.indstate.edu/academicintegrity/ for more information.

Please ask the instructor if you have doubts about what is considered cheating in this course.

Disclosures Regarding Sexual Misconduct

Indiana State University fosters a campus free of sexual misconduct including sexual harassment, sexual violence, intimate partner violence, and stalking and/or any form of sex or gender discrimination. If you disclose a potential violation of the sexual misconduct policy I will need to notify the Title IX Coordinator. Students who have experienced sexual misconduct are encouraged to contact confidential resources listed below. To make a report or the Title IX Coordinator, visit the Equal Opportunity and Title IX website: http://www.indstate.edu/equalopportunity-titleix/titleix.

The ISU Student Counseling Center – HMSU 7th Floor | 812-237-3939 | www.indstate.edu/cns

The ISU Victim Advocate – Trista Gibbons, trista.gibbons@indstate.edu
HMSU 7th Floor | 812-237-3939 (office) | 812-230-3803 (cell)

Campus Ministries - United Campus Ministries | 812-232-0186
http://www2.indstate.edu/sao/campusinistries.htm
www.unitedcampusministries.org | ucmminister2@gmail.com
321 N 7th St., Terre Haute, IN 47807

For more information on your rights and available resources
http://www.indstate.edu/equalopportunity-titleix/titleix