CS 512: Design and Analysis of Algorithms

Syllabus

Summer 2019

Instructor: Behzad Parviz
bparviz@calstatela.edu
(323) 343-6696
ET A312

Office Hours: Tu, Th: 1:30 - 2:30 pm. Other days and times only by prior appointment.


Course Goals: At the end of the course, students are able to

1. Analyze the correctness and computational complexity of computer algorithms.
2. Design (specify and implement) efficient advanced Data Structures.
3. Know advanced design techniques and their nontrivial application to classic problems of searching, sorting, graph optimization and combinatorial optimization.

These course goals contribute to the success of Student Learning Outcomes 1.a, 1.d, 1.e,

Prerequisites: CS 312

Textbook(s): Introduction to Algorithms (3rd Edition). By: Cormen, Leiserson, Rivest and Stein. MIT

Chapters Covered: (1 - 12),4,9, 15(15.1-15.4), 16 , and 22 - 24, 29(29.1-29.3)

Reference(s): Algorithms by Johnsonbaugh and Schaefer

Topics:
1. Review of the CS312 material.
7. Medians and Order Statistics
8. Graph Algorithms.
9. Linear Programming
10. Advanced Design and Analysis Techniques: Dynamic Programing, Greedy Algorithm
Presentations: Each class one Chapter is presented.

Quizzes: There is a quiz after each Chapter Presentation.

Grading Policy: Presentation: 25%, Quizzes: 25%, and Final: 50%

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<tr>
<th>Grade</th>
<th>Score Range</th>
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<tbody>
<tr>
<td>A</td>
<td>90 - 100</td>
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<tr>
<td>B</td>
<td>80 - 89</td>
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<tr>
<td>C</td>
<td>70 - 79</td>
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<td>D</td>
<td>60 - 69</td>
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<tr>
<td>F</td>
<td>below 60</td>
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Academic Integrity: Cheating will not be tolerated. Cheating on any assignment or exam will be taken seriously. All parties involved will receive a grade of F for the course and be reported to the appropriate university authority.

Final Exam: Tuesday July 30, 2019 11:00 -1:00 p.m.

Reasonable accommodation will be provided to any student who is registered with the Office of Students with Disabilities and requests needed accommodation.