

CS 477.001/677.001 Design and Analysis of Algorithms

University of Nevada, Las Vegas

Spring 09, call#03849/05932

Tuesday, Thursday 10:00 am - 11:15 pm, BEH 213

Course Objective

This course gives a rigorous treatment of algorithms and data structures. After taking this course the student will understand the predominant methods used to develop and analyze efficient algorithms.

Prerequisites

CS 302 and MAT 351.

Professor

Dr. Wolfgang Bein

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Office: TBE B 372 E

Office Hours: Tuesday 2:30 pm - 4:00 pm, Wednesday 4:00 pm - 7:00 pm,
Thursday 2:30 pm - 4:00 pm.

Course Page

<http://www.cs.unlv.edu/~bein/teaching/cs477/>

Textbook

Required : Algorithms; DasGupta, Papadimitriou, Vazirani; McGraw Hill, ISBN 0073523402. (This text is pedagogical and gently introduces the material.)

Recommended : Introduction to Algorithms; Thomas Cormen, Charles Leiserson, Ronald Rivest, Clifford Stein; 2nd edition, MIT Press, 2001, ISBN: 0262032937. (This is an encyclopedic compendium, which can be used for look-up and graduate study.)

Teaching Assistant

TBA

Examinations and Assignments

Assignments : Bi-weekly written home work assignments (no programming). (counts for 40% of the grade).

Quiz : Tuesday, February 10, 10:00 am; (counts for 10% of the grade).

Midterm 1 : Thursday, Tuesday March 10 10:00 am; (counts for 15% of the grade).

Midterm 2 Thursday, April 2, 10:00 am; (counts for 15% of the grade).

Final Exam (cumulative, covers all material) : Tuesday, May 5, 10:10 am (counts for 20% of the grade) (cumulative, covers all material).

There are no make-up tests.

Outline of Topics

1. Mathematics Review, Efficiency of Algorithms, Algorithms Analysis, Recurrence Relations (2 weeks, Chapt 0)
2. Divide-and-Conquer (2 weeks Chapt 2)
3. Dynamic Programming (2 weeks, Chapt 6)
4. Advanced Data Structures (2 week)
5. Greedy Algorithms (2 week, Chapt 5)
6. Graph Algorithms (2 weeks, Chapt 3,4)
7. Linear Programming (1 week, Chapt 7)
8. NP-completeness (2 weeks, Chapt 8)

Summary of Selected UNLV Policies:

Students Needing Assistance Due To Documented Disability: Learning Enhancement Services (LES) houses Disability Services, Tutoring Services, and Learning Strategies. If you have a documented disability that may require assistance, you will need to contact LES for coordination in your academic accommodations. LES is located in the Reynolds Student Services Complex, Suite 137. The phone number is 895-0866 or TDD 702-895-0652. You may also visit our website at: <http://www.unlv.edu/studentlife/les>.

UNLV Policy on Copyright: The University requires student to familiarize themselves and to follow copyright and fair use requirements. Students are individually and solely responsible for violations of copyright and fair use laws; see <http://www.unlv.edu/committees/copyright>.

UNLV Policy on Religious Holidays: Students must notify the professor of anticipated absences due to religious observances by the last day of late registration, 1/27/03, to arrange the opportunity to make up missed work.

UNLV Policy on Official (UNLV) Extracurricular Activity: Students who represent UNLV at any official extracurricular activity must provide official written notification to the instructor no less than one week prior to the missed class(es) to have the opportunity to make up missed work.