

Exam 2 Review

TOPICS: What you need to know

1. Lecture slide sets 07, 09, 10, 11
2. All text reading assignments from these slide sets
3. All thinking assignments in these slide sets
4. Making and informed hypothesis about algorithm correctness and proving it using four proof techniques
5. Five notations of complexity order
6. Approximate analyses of algorithm efficiency – estimating Big-Oh complexity
 1. Nonrecursive algorithms
 2. Recursive algorithms
7. Detailed analyses of algorithm efficiency:
 1. Nonrecursive algorithms
 1. Calculating $T(n)$
 2. Determining complexity order
 2. Recursive algorithms
 1. Developing recurrence relations
 2. Interpreting recurrence relations
 3. Solving recurrence relations using various methods
 4. Calculating $T(n)$
 5. Determining complexity order

Exam Structure

- 75 minutes: Time limit strictly enforced - exam will end sharp at 10:45!
- 5 Problems 30 multiple choice questions 60 points
- No need to memorize anything. Any mathematical results or algorithms you need will be provided with the exam.
- The Master Theorem will be provided in the exam
- Calculator allowed, **smartphone cannot be used as a calculator.**

**LEAVE AT LEAST ONE CHAIR BETWEEN
YOU AND YOUR NEIGHBORS**

**IF THIS IS NOT POSSIBLE, YOU MUST SIT
IN ONE OF THE FRONT ROWS**

**BRING YOUR OWN SCANTRON SHEET
PRE-FILLED WITH YOUR NAME (LAST-
NAME, SPACE, FIRST-NAME) AND
BANNER ID**

Exam Instructions

WRITE YOUR NAME ON THE EXAM SHEET

LEAVE AT LEAST ONE CHAIR BETWEEN YOU AND YOUR NEIGHBORS

RESIST THE TEMPTATION TO PEEK AT YOUR NEIGHBOR'S ANSWERS

IF I SEE YOU ENGAGE IN ANY KIND OF CHEATING OR SEE EVIDENCE IN YOUR ANSWERS, YOU WILL FAIL THE COURSE AND THE CASE WILL BE REPORTED

**CALCULATORS MAY BE USED
NO OTHER ELECTRONIC DEVICES ALLOWED
ANY ELECTRONIC DEVICE IN YOUR POSSESSION MUST BE TURNED OFF INCLUDING LAPTOPS AND CELLPHONES**

CLOSED TEXT AND NOTES

**ONLY REGISTERED STUDENTS SHOULD TAKE THE EXAM
AUDITORS SHOULD NOT**

READ AND FOLLOW INSTRUCTIONS ON THE EXAM CAREFULLY

**MANAGE YOUR TIME CAREFULLY
DO NOT GET STUCK ON ANY SINGLE PROBLEM ELSE YOU WILL RUN OUT OF TIME**

ASK PROCTOR FOR SHEETS IF YOU NEED SHEETS FOR SCRATCH WORK