Syllabus

Instructor
Dr. Konstantinos Kalpakis
Computer Science & Electrical Engineering Department
Office: ECS 233A
Phone: (410) 455-3143
Email: kalpakis@cs.umbc.edu
Class homepage: http://www.cs.umbc.edu/~kalpakis/Courses/441/
Office Hours: Monday and Wednesday, 5:30pm-6:30pm, and by appointment.

Meeting Time and Place
Monday and Wednesday 2:00pm–3:15pm
Room CP210

Teaching Assistant: Bianca Benincasa, Room ECS TBA,
Phone: 410-455-TBA, Email: bbenin1@csee.umbc.edu.
Office hours: TBA.

Important Dates

- Midterm Exam 1, February 28, 2000, 2:00pm–3:15pm.
- Midterm Exam 2, April 3, 2000, 2:00pm–3:15pm.
- Final Exam, May 22, 2000, 1:00pm–3:00pm.

Prerequisites MATH–152, CMSC–203 and CMSC–341, or permission of the instructor.

Text. The required text is: “Introduction to Algorithms” by Cormen, Leiserson and Rivest,

List of Topics.

- Order of Growth
- Summations and Recurrences
- Heapsort, Quicksort, Lower Bounds for Sorting, and Linear Sorting Algorithms
• Order Statistics
• Hashing
• Red-Black Trees
• Dynamic Programming
• Greedy Algorithms
• Disjoint Sets
• Graph Traversal Algorithms (BFS and DFS)
• Topological Sorting and Connected Components
• Minimum Spanning Trees
• Shortest Paths

Required Work
Required work consists of (1) taking the two midterm exams and the final exam, (2) homework assignments, and (3) a project. Further, you are expected to actively participate in class discussions. Academic dishonesty will be dealt severely according to University Policy.

Homework
There will be eleven homework assignments. Homework assignments are to be done and written individually by each student. Each homework assignment will be due at the beginning of class, within the first 15 minutes of class, on the date specified. No late homeworks will be accepted, unless University Policy states otherwise. The lowest homework score will be dropped.

Exams
There will be two midterm exams and a comprehensive final exam. All the exams will take place in class and will be closed-book and closed-notes. Make-up exams are possible only under University Policy. You should make prior arrangements with the instructor if you expect to miss an exam.

Project
There will be one project assignment. It must be done and written individually by each student. No late projects will be accepted, unless University Policy states otherwise. Details of the project will be provided shortly after the first midterm exam.

Grading Policy
The course grades will be determined as follows. For each course activity in Table 1, each
<table>
<thead>
<tr>
<th>Activity</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homework</td>
<td>10%</td>
</tr>
<tr>
<td>Project</td>
<td>10%</td>
</tr>
<tr>
<td>Midterm Exam 1</td>
<td>20%</td>
</tr>
<tr>
<td>Midterm Exam 2</td>
<td>25%</td>
</tr>
<tr>
<td>Final Exam</td>
<td>35%</td>
</tr>
<tr>
<td>Total</td>
<td>100%</td>
</tr>
</tbody>
</table>

Table 1: Course Activities and their relative weights.

A student will receive an activity score, which will be the average of the student’s scores on the assignments for that activity. An activity score is a number in the range 0…100. A term score will be computed by taking the weighted sum of the activity scores, using the relative weights given in Table 1. The instructor will convert term scores into letter grades by using the following mapping: $[90, 100] \Rightarrow A$, $[80, 90) \Rightarrow B$, $[70, 80) \Rightarrow C$, $[60, 70) \Rightarrow D$, $[60, 100] \Rightarrow P$, $[0, 60) \Rightarrow F$.

Incomplete grades will be issued only under those extreme situations described by University Policy for granting incompletes. Failure to complete assignments on time is not a sufficient reason for an incomplete.

**Necessary but not sufficient conditions to pass the course are as follows:** you must have a homework activity score of at least 50 points, at least 50 points for the project, and at least 30 points for each exam, including the final exam. For example, if you score less than 50% on any of the midterm exams or the final exam, or if you score less than 50% on the total of all the homework, or if you receive less than 50% on the project, then you will not receive a passing grade. Note that you will need to score at least 60% of the total weighted score for the course in order to receive a passing letter grade (i.e. P or D and above).