Course Syllabus

Course Information
CS 6301-002: Special Topics in Computer Science - Computational Geometry, Spring 2020
Tue & Thu 11:30am–12:45pm, ECSN 2.110
Website: https://utdallas.edu/~kyle.fox/courses/cs6301.002.20s/

Instructor Contact Information
Kyle Fox, Assistant Professor
Phone: (972) 883-4168
Office: ECSS 4.224
Office Hours: Mondays 10:00am–11:00am, Tuesdays 2:00pm–3:00pm (tentative).
Additional office hours available by request.

TA Contact Information
TBA
Office:
Office Hours:

Course Pre-requisites, Co-requisites, and/or Other Restrictions
CS 5343 (CS 6363 or equivalent recommended)

Course Description
Course will cover standard computational geometry topics such as computation of convex hulls and Voronoi diagrams, basic geometric algorithm techniques such as sweep line algorithms and use of duality, basic geometric data structures such as trapezoidal decompositions and binary space partitions, and geometric optimization algorithms. Some emphasis will be placed on the real world use of geometric algorithms. Specific topics will be determined by the instructor as the semester progresses.

Required Textbooks and Materials


Suggested Course Materials
The instructor will provide their own lecture notes on the course website https://utdallas.edu/~kjfl70230/preview/courses/6301.002.20s/.
Assignments & Academic Calendar
Homework will be assigned every couple weeks. There should be four or five homework assignments released. Students will also participate in some sort of project involving a short survey, implementation, or research. Students will propose their project midway through the semester via a two page paper. They will then submit a longer paper on their results, and, depending on how many students sign up for the class, they may give a roughly 20 minute long presentation on their work at the end of the semester. Whether or not there is a presentation will be determined near the beginning of the semester.

Grading Policy
Each homework assignment is given equal weight. Grades are determined by a weighted sum of the following three items.

<table>
<thead>
<tr>
<th>Component</th>
<th>Weight</th>
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<tbody>
<tr>
<td>Homework</td>
<td>50%</td>
</tr>
<tr>
<td>Project Proposal</td>
<td>10%</td>
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<tr>
<td>Final Report and Presentation</td>
<td>40%</td>
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Grades are determined by each student’s performance relative to the class average. However, there is no fixed curve. If everybody performs well, then everybody can get top grades. Please talk to the instructor about grades before considering dropping the course.

Course & Instructor Policies
Details on remaining course policies for assignments and writing of homework solutions can be found on the course website https://utdallas.edu/~kjf170230/preview/courses/6301.002.20s/. A few key points can be found below.

All assignments will be due on eLearning immediately before class starts on the day they are due. Late submissions will be accepted, but any late submission made within 24 hours of when the assignment is due will have its score deducted by 10% the maximum score possible. Late submissions made more than 24 but less than 48 hours after the assignment is due will have the score deducted an additional 10% (so 20% total). No points will be awarded for submissions more than 48 hours late. Even after deductions, scores cannot be negative.

Small groups of at most three students may work together and turn in homework as a single submission. Individual submissions are fine as well. Homework should be turned in via eLearning. eLearning is not well designed for group submissions, so each group should have exactly one of its member’s turn in the assignment. The grade for the one submission will be given to all group members.

Project proposals should be done individually, but groups of up to three students may work together on the projects themselves. Each group should turn in a single final report and do a single project presentation.

It is expected that students be able to solve homework problems using only course material and the work within their homework group. If necessary though, students are permitted to use any outside source or person as long as they cite the source and rewrite the solution in their own words. They may also work with students outside their group, but again, they must cite all collaboration with other students in the class outside their group. Properly cited and rewritten outside material is still worth full credit. Material not cited or not rewritten in students’ own words will be considered an act of academic dishonesty and suspected incidents will be reported to the Office of Community Standards and Conduct. Students do not need to cite anything from this course or prerequisite courses, but when in doubt, they should cite anyway just to be safe.
There may be a small amount of extra credit available. It will not affect the percentage cutoffs for students’ grades, so it can only help you.

Requests for regrades must be made within one week of the homework assignment or exam being returned. The problem in question will be completely regraded, so the score may actually go down.

It is the Computer Science Department’s policy that absence in three consecutive lectures will result in the course grade being lowered by one letter and absence in four consecutive lectures will automatically result in a failing grade (F) in the course.

**UT Dallas Syllabus Policies and Procedures**
The University maintains a standard policies and procedures segment for course syllabi. Please refer to [http://go.utdallas.edu/syllabus-policies](http://go.utdallas.edu/syllabus-policies) for this segment.

*These descriptions and timelines are subject to change at the discretion of the Professor.*