

Computational Geometry

Course instructor: *Dr. Anirban Ghosh*

Email: anirban.ghosh@unf.edu

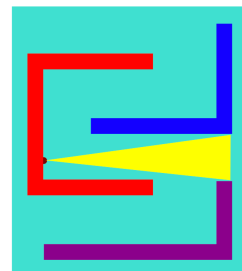
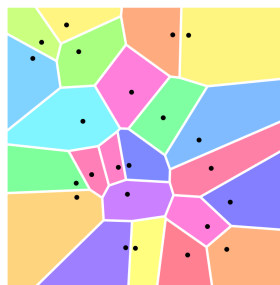
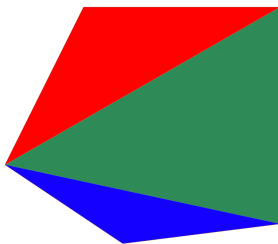
[\(mailto:anirban.ghosh@unf.edu\)](mailto:anirban.ghosh@unf.edu)

Homepage: <https://anirbanghosh.domains.unf.edu/>

Lecture timings (in-person): TR, 4:30 PM to 5:45 PM

Lecture room: Building 4, Room 1703

Office hours (in-person): TR, 1:00 PM to 3:30 PM



Syllabus for this course: [4930Syllabus.pdf](#),
(<https://canvas.unf.edu/courses/77997/files/11772918?wrap=1>)
[5930Syllabus.pdf](#) (<https://canvas.unf.edu/courses/77997/files/11772919?wrap=1>)

David Mount's lecture notes: [cmsc754-fall-2021-lects.pdf](#)
(<https://canvas.unf.edu/courses/77997/files/11719603?wrap=1>)

Week 1	<p>Introduction to algorithm analysis</p> <p>Slides: 1-Introduction.pdf (https://canvas.unf.edu/courses/77997/files/11748026?wrap=1)</p>
Week 2	<p>C++, CGAL</p> <p>Slides: 2-Softwares.pdf (https://canvas.unf.edu/courses/77997/files/11814830?wrap=1).</p> <p>CGAL on Linux (installation and use): cgalOnLinux.txt (https://canvas.unf.edu/courses/77997/files/11782109?wrap=1) ↓ (https://canvas.unf.edu/courses/77997/files/11782109/download?download_frd=1)</p> <p>Sample CGAL Project with Qt6 demo (download, unzip, start using CLion): TestCGALProject.zip (https://canvas.unf.edu/courses/77997/files/11782147?wrap=1) ↓ (https://canvas.unf.edu/courses/77997/files/11782147/download?download_frd=1)</p>
Week 3	<p>More on CGAL, Solving closest-pair in $O(n \log n)$ time</p> <p>Slides: 3-ClosestPair.pdf (https://canvas.unf.edu/courses/77997/files/11808591?wrap=1)</p>
Week 4	<p>Convex Hull</p> <p>Slides: 4-ConvexHull.pdf (https://canvas.unf.edu/courses/77997/files/12024775?wrap=1)</p>
Week 5	<p>Line-segment intersections; Triangulations started</p> <p>Slides: 5-Intersections.pdf (https://canvas.unf.edu/courses/77997/files/11918415?wrap=1)</p>
Week 6	<p>Triangulations continued, take-home exam posted</p> <p>Slides: 6-Triangulations.pdf (https://canvas.unf.edu/courses/77997/files/12021153?wrap=1).</p>
Week 7	<p>The Take-home exam is due</p>
Week 8	<p>Point Location</p> <p>Slides: 7-PointLocation.pdf (https://canvas.unf.edu/courses/77997/files/12076799?wrap=1).</p> <p>Project ideas discussed</p>

Week 9	<i>Spring break!</i>
Week 10	Voronoi Diagrams Slides: 8-VoronoiDiagram.pdf (https://canvas.unf.edu/courses/77997/files/12141698?wrap=1) .
Week 11	Worked on course projects during the lectures
Week 12	HW2 discussion Delaunay Triangulations Slides: 9-DelaunayTriangulation.pdf (https://canvas.unf.edu/courses/77997/files/12227156?wrap=1) .
Week 13	Delaunay Triangulations + project work
Week 14	April 19 and 21: Project work
Week 15	<p>Project Presentations (around 30 minutes): Create an appropriate set of slides. To upload: slides + 1-page write-up using Latex (you may use OverLeaf) + applet/code developed in a ZIP by April 29.</p> <p>April 26: John, Toby, Marshall, April 28: Shariful, Per</p> <p>The final exam will be posted on April 28 Due date (hard deadline): May 5, 5:00 PM.</p>