

CSE 5339: Computational Topology and Data Analysis
Fall 2013
(Dynamic Schedule)

Lectures	Materials	Comments
Aug 20	Basic topology I	
Aug 22	Basic Topology II	
Aug 27	Maps	
Aug 29	Manifolds	
Sep 03	Simplicial complex	
Sep 05	Delaunay complex, Čech complex, Vietoris-Rips complex	
Sep 10	Witness complex and Graph Induced Complex	
Sep 12	Chains, Boundaries, Cycles, Homology groups	
Sep 17	Induced maps	
Sep 19	Relative Homology groups	
Sep 24	Filtrations, Persistent homology	
Sep 26	Persistence algorithm	
Oct 01	Persistence diagram	
Oct 03	Variants of persistence	
Oct 08	No Class	
Oct 10	Exam	
Oct 15	Sampling concepts	
Oct 17	Curve reconstruction	
Oct 22	Surface reconstruction	Term paper topic
Oct 24	Manifold reconstruction	
Oct 29	No Class	
Oct 31	No Class	
Nov 05	Persistence diagram from data	
Nov 07	Persistence modules and interleaving	
Nov 12	Sparsification	
Nov 14	Shortest cycle basis	
Nov 19	Shortest cycle basis II	
Nov 21	Reeb graphs	
Nov 26	Approximation of Reeb graphs from data	
Dec 03	Presentation	TP submission

Instructor: **Tamal K. Dey**, Room: **483 DL, 292-3563**.

Classes: **TTH 12:40–1:35 at DL480**

Office hours: **TTH 1:40-2:00 pm. or by appointment**

Grading Policy: **Exam: 50%, Term paper: 40%, Class participation 10%**

Course web-page

<http://www.cse.ohio-state.edu/~tamaldey/course/CTDA/CTDA.html>