Topology | Final Presentation & Report | Spring 2016

During the month of May, YOU will be teaching this course. Each student or group will prepare a lecture on one of the following topics, complete with definitions, proofs of theorems, and example problems. One student/group will present each day prior to our final exam date, and two students/groups will present on the final exam date.

Individual presentations should be at least 30 minutes long (with prepared exercises for your classmates to work during the remainder) and no longer than 50 minutes (still leaving 5 minutes for questions), and must be presented at the SmartBoard using Smart Notebook. Groups should expect to fill the 55-minute class period. Feel free to start with a notebook file containing headings, key word prompts, statements of theorems, and/or example problem questions, but you must construct the proofs and solutions to examples as your lecture. You can download a free 90-day trial of Smart Notebook at https://education.smarttech.com/en/products/notebook/download#trial.

Each individual will write up a report for their part of the project. Your report should include a complete written account of the material you present in your own words. Proofs copied word for word from books will be unacceptable. If you have to skip some details in your presentation due to time constraints, you should fill in these gaps in your report. A rough copy of your report should be submitted at least 3 days before your presentation so that I can look over it. The **final copy of your report is due May 20**, the last day of class. The final report should be typed using the equation editor in Word for all math formatting OR the report may be typed using LaTeX.

The final presentation and report will be worth 100 points, with no opportunity to "make up" any of the points after the fact. Points will be awarded based on your understanding of the material and your ability to explain it, as well as the quality of your presentation.

You are not expected to figure everything out on your own! Meet with me regularly before your presentation with questions.

Schedule of Topics & Presentations:

Mon.	9 May	**The Product Topology** (Munkres 2.15; Armstrong Ch 3)	Rohit
Tues.	10 May	**The Subspace Topology** (Munkres 2.16; Armstrong 2.1)	David
Wed.	11 May	**Connected Spaces** (Munkres 3.23-24; Armstrong Ch 3)	JP
Fri.	13 May	**Compact Spaces** (Munkres 3.26; Armstrong Ch 3)	Anthony
Mon.	16 May	**Knots & Seifert Surfaces** (Adams; Murasugi; Armstrong 10.1,10.3)	Lauren, Troy, John Owen, Seth
Tues.	17 May	**DNA Topology** (Bates & Maxwell; Adams 7.1; Murasugi, 13.1)	Maria, Renata, Angela
Wed.	18 May	**Sphere Eversion** (Armstrong 10.1,10.3)	Mikey, Allison, Jacob

Resource List:

In the ASMS Library:

Call Numbers: TXT MA; DNA topology by Bates, Andrew D. - 2005.

Call Numbers: 514.220 Ada; The knot book : an elementary introduction to the mathematical theory of knots by Adams, Colin C. - 1994

Call Numbers: R 514.224 Mur; Knot theory & its applications by Murasugi, Kunio, - c2008

Call Numbers: R 514 Arm; Basic topology by Armstrong, M. A. - c1983

Call Numbers: R 514.2 Hen; A combinatorial introduction to topology by Henle, Michael. - 1994

Call Numbers: R 514 Bar; Experiments in topology by Barr, Stephen. - 1989, c1964

Call Numbers: R 513.83 Chi; First concepts of topology: the geometry of mappings of segments, curves, circles, and disks, by Chinn, William G. - [1966]

Call Numbers: R 514.224 Fra; A topological picturebook by Francis, George K. - c2007

Online:

Wikipedia

Wolfram Math World

"Scottish Physics and Knot Theory's Odd Origins" (and other knot history articles) by Dan Silver

Andrew Ranicki's Knot theory archive: http://www.maths.ed.ac.uk/~aar/knots/index.htm

"A History of Sphere Eversions" by John Sullivan

Various blogs, Powerpoints, and .pdfs regarding the Carter-Gelsinger eversion

"Outside In" video

"Optiverse" video