Math 32101: Elementary Topology
(Class No: 22005)

Meets: MW 3:00–4:15p in LD 002
Final Exam: Friday, May 8, 3:30–5:30p

Instructor: Carl Cowen   **Office:** LD 224P   **Phone:** 278-8846
Office Hours: M 12:15-1:15, Tu 11:00-12:00, Th 11:40-1:00, or by appointment
E-mail: ccowen@iupui.edu
Info: Canvas page or **Webpage:** http://www.math.iupui.edu/~ccowen/Math321.html

General Information and Goals

Math 32101 is an introduction to the mathematical subject of *topology*, related to and, in a way, an extension of geometry. In particular, topology emphasizes the ideas of 'closeness' and 'connectedness' while not necessarily including ideas of 'distance'.

This subject, while relying on some ancient ideas of geometry, began to be developed in the 19th century and was very extensively studied, and created, in the 20th century. For the most part, it is still considered a part of 'pure' mathematics, even though many parts of it are important in applications to 21st century inventions and problems.

While there will be parts of this course that that will remain in the area of 'intuition', there will often be areas where proofs will be presented and problems for which the main 'answer' will be a proof.

There will be two official 'textbooks' for this course and they will both be on reserve in the IUPUI library for 'two-hour' use. If you wish to own one or both of these books, the IUPUI bookstore could order these books for you, but Amazon or similar sources would probably be cheaper and faster ways of obtaining them.
   Text: *Intuitive Concepts in Elementary Topology*, by B. H. Arnold,
        Prentice Hall, (1962).
   Text: *Undergraduate Topology*, by R. H. Kasriel,
        W.B. Saunders Company (1971).

Reading and writing are important skills for life, including mathematics, and they will be important in this class as well. In your homework, your writing will be graded for spelling, grammar, and clarity of exposition as well as for mathematical correctness. In tests, writing is also important, but will not be as much of a focus as for the homework.

Reading will be an active part of this course as well. Reading assignments will be given and *your reactions to the reading assignments will be due by email by 2:00pm of the day specified in the assignment.* The test and the final exam may also include readings that are related to the material of the course and, if a reading is included, there will be questions concerning the reading as part of the test.

Conversations about this mathematics will help facilitate your learning in the course, so occasional attendance at office hours is encouraged. In addition, there will be periodic 'recitation' classes scheduled where questions about the course, including the homework, can be discussed (attendance is not required).

Homework, Test, Exam, and Grading Policies

In addition to the comprehensive Final Exam on May 8, there will be a midterm test in early March. Grades for the course will be based on the responses to the reading assignments (approximately 10%), written homework (15 to 20%), the midterm test (approximately 30%), and the comprehensive final examination (approximately 40%). Late homework assignments may be handed in for feedback if you wish, but they will be recorded in the gradebook as 0's and similarly, late reactions to the reading assignments will be read and may be commented on, but will be recorded as 0's. However, the lowest two homeworks and the lowest (one) reaction to the readings will be dropped before computing the final grades. Each homework assignment will be worth the same number of points and the reactions to the readings will be rated as *not returned or insubstantial response* (0 points), *fair* (1 point), or *good* (2 points).

Boost: Indiana University has developed a smartphone app to help students stay on top of schoolwork in Canvas. Students in this class are welcome to use this app. It is free, provides notifications and reminders for schoolwork in Canvas, helps keep track of assignment deadlines, important announcements, and course events.

For more information, see `https://boost.iu.edu`

General Academic Policies

The work you submit for quizzes, tests, and the final exam must be your own. For homework, you will probably find it beneficial to consult with other students about the material and this kind of conversation and collaboration is encouraged. At the end of the consultation, however, each participant should prepare their own summary of the discussion and their own solutions to the problems because that will be required on quizzes and tests. The policies for this class will be those derived from IUPUI's policies on academic conduct and adaptive services.

More information concerning adaptive services for learning or other disabilities at IUPUI can be found at `http://aes.iupui.edu/`

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COURSE POLICIES: IUPUI has certain policies that apply to every course; this course will follow these policies also. See "IUPUI Syllabus Supplement" on the Canvas page for this course.

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Some Important Dates

January 13	First day of classes
January 15	No Class
January 19	Last day to withdraw with no record and 100% refund
January 20	Martin Luther King Day, no classes
March 4 or 9	Midterm Test
March 13	Last day to withdraw with automatic "W" (with permission of advisor)
March 14–22	Spring Break, no classes
May 4	Last day of classes
May 8	Final Exam, 3:30p-5:30p