Tennessee Technological University
Mathematics Department

MATH 4310-4320/5310-5320: Introduction to Topology I-II

Professor: Jeffrey Norden; Office: BR332; phone: x3592; email: jnorden
Class meets in Bruner Hall room 420, MWF 11:15-12:10. Your grade will be largely
based on class participation, but midterm and final exams will also be given. The standard
departmental syllabus appears below. For more information about our particular section of
topology, please see the file named Course_information on our class web site.

I.   COURSE DESCRIPTION FROM CATALOG:
Topological spaces continuity, connectedness, compactness, separation axioms, function
spaces, and fundamental groups. Lec. 3-3. Cr. 3-3.

II.   PREREQUISITE(S):
MATH 4310: C or better in MATH 3400 (or consent of instructor for MATH 5310).
MATH 4320: C or better in MATH 4310 or 5310.

III.   COURSE OBJECTIVE(S):
Students understand the basic concepts of topology including limits continuity and
improve their ability to read and create mathematical proofs.

IV.   STUDENT LEARNING OUTCOMES:
MATH 4310/5310
Upon successful completion of the course students will understand the idea of a
topological space along with basic related concepts, including basis, subbasis, open set,
closed set, limit point, and continuous function on a topological space; be familiar with
standard topologies, including the order topology, the product topology, the subspace
topology, and the metric topology; be familiar with the notions of connectedness and
compactness along with the implications these concepts have for a topological space; be
familiar with the standard separation axioms T0, T1, T2, T3, and T4 and the first and
second countability axioms along with the implications these concepts have for a
topological space; and create proofs of basic results in topology concerning the
aforementioned concepts.

MATH 4320/5320
Upon successful completion of the course students will understand the notions of
compactification, completeness, function space, and fundamental group; be familiar with
Urysohn's Lemma, Tychonoff's Theorem, and the Nagata-Smirnov Theorem; and create
proofs of basic results in topology concerning the aforementioned concepts.

V.   TOPICS TO BE COVERED:
1. Topological spaces continuity
2. Connectedness
3. Compactness

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        4. Separation axioms
        5. Function spaces
        6. Fundamental groups

VI.   ADDITIONAL INFORMATION:
Graduate credit is earned on the basis of additional work required by the instructor per TTU Graduate Catalog.

VII.   POSSIBLE TEXTS AND REFERENCES:
General Topology, by Willard
Topology: First Course, by Munkres

VIII.   ANY TECHNOLOGY THAT MAY BE USED:

IX.   STUDENT ACADEMIC MISCONDUCT POLICY:
Maintaining high standards of academic integrity in every class at Tennessee Tech is critical to the reputation of Tennessee Tech, its students, alumni, and the employers of Tennessee Tech graduates. The Student Academic Misconduct Policy describes the definitions of academic misconduct and policies and procedures for addressing Academic Misconduct at Tennessee Tech. For details, view the Tennessee Tech's Policy 217 – Student Academic Misconduct at Policy Central.

X.   DISABILITY ACCOMMODATION:
Students with a disability requiring accommodations should contact the Office of Disability Services (ODS). An Accommodation Request (AR) should be completed as soon as possible, preferably by the end of the first week of the course. The ODS is located in the Roaden University Center, Room 112; phone 372-6119. For details, view the Tennessee Tech's Policy 340 – Services for Students with Disabilities at Policy Central.

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