California State University Long Beach
Math 555: Introduction to 3-Manifolds, Spring 2017

Professor : Ryan Blair
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Office : FO3-213
Office Hours: TuTh 5:15-6:15pm in F03-213

Class Meetings: TuTh 4:00-5:15pm in LA5-151

Text: Jennifer Schultens, *Introduction to 3-Manifolds* (Required)

Course web page: http://www.csulb.edu/~rblair/Math555S17/index.html

Prerequisites: Math 550A or Math 550

Course description: The course will begin by defining topological manifold, introducing differential and simplicial structures on manifolds, and briefly discussing the classification of surfaces. We will focus on fundamental concepts in the study of 3-manifolds such as the Shonfleis theorem, the prime decomposition theorem for 3-manifolds, incompressible surfaces, Dehn's Lemma, and the JSJ decomposition of 3-manifolds. Time permitting, we will also cover fiber bundles and Heegaard splittings.

Attendance: To be successful in this course, you should be present for all class meetings. If you must miss class, please notify me as soon as possible. For more information, see
http://www.csulb.edu/divisions/aa/catalog/current/academic_information/class_attendance.html

Virtual Week: The week of Feb. 13th will be a "virtual" class meeting week in which the class will be assigned reading from the text and relevant problems. Class discussion will occur on Beachboard and participation will be mandatory. I will moderate the Beachboard forums and facilitate discussion. A more detailed description of the format of the virtual week will be distributed later in the semester.

Homework: Homework assignments will be distributed in class and/or on the course web page, typically once a week. They will be due as noted. You are responsible for being aware of the assignments and due dates

You are strongly encouraged to work in groups to exchange ideas and help each other understand how to approach problems, but the work you turn in must be your own! If you work with others on an assignment, be sure to indicate the names of the other students on your homework. Additionally, if you use any resources to help you solve homework problems, you must cite your sources. Homework must be legible, well-organized, and written in complete sentences. Handwritten work is fine, but you are encouraged to type up the problems in LaTeX.

Exams: There will be one midterm exam, according to the following tentative schedule:
1) Midterm 1: in class, March 21st

Final Project: The final project will give you the opportunity to explore a topic in 3-manifold topology at a deep level. The project will have a written and oral presentation component. Additional information regarding the final project will be distributed later in the course.

Grades: Your grade for the course will be determined based on the following factors:

Homework 50 %
Midterm exam 20 %
Final Project 30 %

Office hours: I will hold regular office hours at the times noted above, unless I email or tell you otherwise in class. Alternatively, you may set up an appointment to meet with me.

Accommodations: Students needing accommodations because of a disability should first register with Disabled Student Services and present the appropriate forms issued by DSS to the instructor no later than two weeks from the date classes begin. Information regarding DSS can be found at http://www.csulb.edu/divisions/students2/dss/.

Withdraw: The last day to withdraw without receiving a W is **February 5th**. The last day to withdraw without the CNSM dean's signature is **April 21st**. Plan early since it's sometimes hard to track people down for signatures. Any office hour may be cancelled due to illness or necessary appointments, and the students should not therefore depend on a faculty member being in his/her office for a particular office hour. Students should secure any necessary signatures well in advance of any deadlines.

Academic Integrity: Academic integrity is expected for assignments and exams. The usual penalty for a student caught cheating or plagiarizing includes an F in the course. Further penalties may include probation, suspension, or expulsion from the university. More information can be found on http://www.csulb.edu/divisions/aa/catalog/current/academic_information/cheating_plagiarism.html

Note: The instructor reserves the right to alter anything on this syllabus at any time during the semester. Any alterations will be announced in class.