

**Math 607: Tensor Categories**  
**Winter 2024, CRN 23259**

**Instructor:** Victor Ostrik

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**Office hours (tentative):** MW 10-11 or by appointment

**Class meets:** TR 2pm-3:20pm at Peterson 101

**Course website:** <https://pages.uoregon.edu/vostrik/math607winter24/index607.html>

All handouts (e.g. homeworks) for the course will be posted there.

**Texts:** (some electronic versions available on class website)

- B. Bakalov, A. Kirillov, Jr “Lectures on Tensor Categories and Modular Functor”
- C. Kassel “Quantum Groups”
- P. Etingof, S. Gelaki, D. Nikshych, V. Ostrik “Tensor categories”
- M. Kashiwara, P. Schapira “Categories and sheaves” (Chapter 4)

**Homework:** There will be few homework assignments which should be submitted in class. Collaboration on homework assignments is allowed and encouraged, provided that you write up your solutions independently. It is expected that the students will typeset their homework solutions using LaTeX.

**Grading:** Your grade will be determined by class participation. This includes (but not limited to) class attendance, homework assignments, class presentations, writing class notes.

**Learning Outcomes:** As with most advanced math classes, the most important skills that you will develop in this class will be related to communication (reading, writing, listening, and speaking) about quantitative subjects. These skills will be valuable in any of your future endeavors, academic or otherwise. More specifically to this class, we will discuss basic notions and examples of tensor categories. Thus we describe symmetric tensor categories and Tannakian theory, braided and non-braided tensor categories. An important example of Temperley-Lieb category will appear. Time permitting we will consider applications in topology and condensed matter physics.