# Description for TQFTs and Frobenius Algebras reading group, Spring 2019
## 343 Altgeld. Wednesdays 5:30pm - 6:30pm

**Facilitators:** Dr. Chelsea Walton (primary) and Dr. Daniel Berwick Evans

**Email and Office Location:** notlaw@illinois.edu, 374 Altgeld; danbe@illinois.edu, 376 Altgeld

**Reading Group website:** https://faculty.math.illinois.edu/~notlaw/teaching.html#current

**Textbook:** "Frobenius algebras and 2D topological quantum field theories" by Joachim Kock, xiv+240pp., No. 59 of LMSST, Cambridge University Press, 2003.
**Errata page:** `http://mat.uab.es/~kock/TQFT.html#errata`

**Reading Group Objectives:** The main mathematical goal is to get to the Main Theorem (Theorem 3.3.2) on the equivalence of 2-dimensional TQFTs and commutative Frobenius algebras; we will cover background material on manifolds, categorical notions, and Frobenius algebras before arriving there. In the first meeting, we will go through a brief overview of the material covered in the Spring and will discuss some background material in the appendix.

We will also cover "Talk Tips, Etiquette and the Niceties" for seminars, such as:
   * How to prepare to give a talk,
   * How to give a talk,
   * How to listen to a talk,
   * How to ask questions (before/ after) talk,
   * How to give feedback for a talk,
   * How to receive feedback...for a talk.

Then the rest of the talks will be given by students! Towards the Main Theorem, selections of the book are divvied up for 20 minute students talks on the Reading Group Schedule.

**Mechanics for student talks:** Some selections in the book are longer than others due to a natural break in the material, but speakers will make the most of their selection of material to produce a nice 20 minute talk. This may require going through details or skipping details, preparing a board of diagrams before lecture, or using handouts. Big results and many examples should emphasized, and one can add key ideas of proofs if time permits. Unless arranged otherwise, all talks should be chalk-talks.

Please do let us know if we need to accommodate for disability purposes (e.g., if one needs to give slide talks or if we should contact DRES for resources). We're happy to do this.

**Feedback:** There will be no grades but we will provide feedback to help for future talks, including listing aspects of presentations that already work well for the speaker.

**Mechanics for fun:** The main purpose of these meetings is to have fun chatting about and listening to math. Keep in mind that no talk is perfect because "good" is a matter of subjective taste. But one should always do their very best, no more no less.

We hope to have 12-15 students who are willing to give this a go so that they can have the opportunity to give 2-3 talks each. Other students are welcomed to sit-in, but other faculty. . . not so much. :)