

**Math 315 (Mathematical Modeling II).
Syllabus (Winter Semester 2004)**

**Section: 1,
Time: 1:00-1:50,
Room: MDLBH 310.**

Instructor: Dr. Artem Zvavitch
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Office Hours: 10:00-11:00 am, Monday and Wednesday, **or by appointment**

Textbook: Probability Models, by Sheldon M. Ross.

Plan:

1. **Very short introduction to probability theory:** sample space and events, probabilities on events, conditional probability, independence, random variables, expectation, conditional expectation. **basic ideas of modeling: simple applications to Computer Science and Modeling. "Simple" gambling. Portfolio Theory**
2. **Continuous-Time Markov Chains** (Birth and Death processes)
3. **Pseudo-Random Generators** (i.e. How one can generate a "random" structure on Computer, and why do we need this) **Applications to cryptography.**
4. **Introduction to queuing theory** ("random" customer service)

Grading Policy: 60% for your homeworks, 40% for final project. We will choose a particular project for each student depending on his/her interests or "big" final homework. Examples: Cryptography, Portfolio theory, Electrical engineering and Probability for High-school students.

If you have any problem with this course, please report it to Professor Michael Pang (course coordinator and the director of Undergraduate Studies) either by phone (882-0322) or by e-mail (pangm@math.missouri.edu).

Disability Statement: If you need accommodations because of a disability, if you have emergency medical information to share with me, or if you

need special arrangements in case the building must be evacuated, please inform me immediately. Please see me privately after class, or at my office. To request academic accommodations (for example, a note taker), students must also register with Disability Services, AO38 Brady Commons, 882-4696. It is the campus office responsible for reviewing documentation provided by students requesting academic accommodations, and for accommodations planning in cooperation with students and instructors, as needed and consistent with course requirements. Another resource, MU's Adaptive Computing Technology Center, 884-2828, is available to provide computing assistance to students with disabilities. For more information about the rights of people with disabilities, please see ada.missouri.edu or call 884-7278.

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