

FALL 2018  
**BEM 101 “MATHEMATICAL MODELS IN FINTECH”**

**Instructor:** Jakša Cvitanić; 203 Baxter, (626) 395-1784,  
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**Office Hours:** Thursday 2:00-2:30, and by appointment

**Disclaimer:** The syllabus is subject to change.

**Class meetings:** T Th 5:05-6:30PM

**Description:** In this course we will go over recent works on topics broadly contained in the newly emerging field of fintech. In particular, possible topics include mathematical modeling of algorithmic trading, of strategic actions of agents interacting via a blockchain technology, and of crowdfunding and lending.

**Prerequisites:** A calculus-based course in probability is required. Some exposure to game theory, optimization, stochastic processes and partial differential equations is helpful, but not mandatory. BEM 103 Introduction to Finance is recommended.

**Approach:** It will be partly a seminar type course. We will go carefully through some recent papers and/or books on topics of interest.

**Grading:** The class attendance is mandatory. The grade will be based on class participation and on in-class presentations.

**Course Material:**

There is no required textbook, but we will cover parts of this book:

“Algorithmic and High-Frequency Trading”, by Cartea, Ivaro and Sebastian Jaimungal.