# FINANCIAL COMPUTATION AND MODELING

## THE GEORGE R. BROWN SCHOOL OF ENGINEERING AND THE SCHOOL OF SOCIAL SCIENCES

**DIRECTOR**
Katherine B. Ensor

**STEERING COMMITTEE AND UNDERGRADUATE ADVISORS**
Mahmoud El-Gamal
James R. Thompson

### Degrees Offered: None

The Departments of Statistics and Economics collaborate to offer Rice undergraduate students a minor in financial computation and modeling (FCAM). The FCAM minor consists of six courses focusing on the strategies and computational technologies used in the financial industry. The minor is designed for those students with strong computational skills and an interest in finance. Many students pursuing the FCAM minor enter careers in the financial industry, either immediately after completion of their undergraduate studies or after graduate studies. Students completing the FCAM minor will understand the complexities of financial markets and their role in and impact on world economies. For the last two decades, this sector of our economy has significantly increased its reliance on quantitative probability based methods in assessing risk and implementing financial strategies; strategies on which our economy depends.

The basic tools component of the FCAM curriculum will equip students with the economic (ECON 211 or ECON 370), probability (STAT 310) and statistical tools (ECON 400 or STAT 410) necessary to pursue the advanced analytical courses. In the advanced courses, students will be exposed to state-of-the-art models and methodologies based on long-standing assumptions about the behavior of financial markets. They also will be exposed to alternative views of market behavior and investment strategies. The goal is to educate students to question basic assumptions as well as utilize and understand technologies based on these important assumptions. In the financial industry, a large suite of solutions are implemented and continually enhanced. A goal of the FCAM program is to train leaders in this industry who not only will understand the financial technologies but also will understand the role, impact, and potential pitfalls of these technologies.

### Requirements for Minoring in FCAM

Students must take three courses each from the two following groups:

***Basic Tools (Choose three)***
ECON 211 *Principles of Economics,* or
ECON 370 *Microeconomic Theory*
STAT 310/ECON 382 *Probability and Statistics*
ECON 400/STAT 400 *Econometrics,* or
STAT 410 *Introduction to Regression and Statistical Computing*

***Financial Computation and Modeling (Choose three)***
ECON 355 *Financial Markets,* or
ECON 448 *Corporate Finance*
STAT 421 *Computational Finance II: Time Series Analysis*
ECON 449 *Basics of Financial Engineering*
STAT 486 *Computational Finance I: Market Models*