Stat 958:587 Advanced Simulation Methods for Finance

General Information:

Name: Min-ge Xie
Email Contact: mxie@stat.rutgers.edu
Office: Room 574, Hill Center
Meeting Hours: Thursday 6:40pm - 9:30pm (10-15 minutes break in between),
Meeting Place: ARC 206 (Busch Campus)
Office Hours: Wednesday 11:00am-12:00pm or by appointments

TA information:
Mr. Jieli Shen; email: jieli.shen@rutgers.edu; Office: Room 557, Hill Center; Office
hours: Tuesday 2:30-4:30pm

Textbooks (Recommended):
— Jackel P., Monte Carlo Methods in Finance (Wiley)
— Glasserman P., Monte Carlo Methods in Financial Engineering (Springer)
— Venables, W.N. and Ripley, B.D., Modern Applied Statistics with S-Plus (Springer)

Grading:

Homework assignments (30%), midterm exam (25%), final exam (40%) and class participation (5%).

The final letter grades will be determined by the order of combined scores. A predetermined grading curve (1/3 A; 1/3 B+; 1/3 B and below) will be strictly imposed.

Syllabus and Emphasis:

The emphasis of this course will be on Modern simulation methods and advanced statistical computing techniques for financial applications. We will introduce
— Monte-Carlo simulation methods,
— Variance reduction technique,
— Bootstrap methods,
— Markov chain Monte Carlo methods,
— Bayesian method and computing
— Sequential Monte Carlo method,
— Hidden Markov models (if time allows)
— etc.

Recommend C++, JAVA, or R for programming and data analysis.