This course introduces students to asset management with an emphasis on quantitative models. The building blocks of the course are portfolio theory and factor models, active quantitative investment strategies, liquidity risk and liquidity risk management, and performance evaluation. Special topics change from one semester to another to reflect recent trends and practices in the industry. This year’s special topic will cover (1) liquidity risk and management of liquidity risk; (2) lessons from recent financial crisis; (3) risk and return profiles of hedge funds.

In addition to regular lectures, this course uses case studies and guest lectures to enhance student understanding of the decision making process and the problem-solving skills of asset managers.

The course objectives are achieved through a combination of lectures, case studies, homework problem sets, and presentations by leading practitioners (followed by discussion of the issues such presentations bring forth). Homework problem sets, case studies and reading assignments are integral components of the learning process and you are expected to spend considerable amount of time working on them.

Contents of Topics
Factor Models
1. Regression models
2. Application of factor model

Return Predictability
1. Time-Series Return Predictability
2. Cross-Section Return Predictability: (1) value/growth; (2) momentum; (3) short-term reversal; (4) accrual; (5) issuance; (6) analyst forecast and forecast errors; (7) economic linkage; (8) news media sentiment

Market Frictions
1. Short-sale constraints and asset prices
2. Transaction costs and asset prices
3. Capital immobility, liquidity, liquidity risk and asset prices
4. Capital gain and dividend tax, tax clienteles and asset prices
5. Regulatory constraints and asset prices

Constrained Investors
1. Mutual Funds: (1) performance evaluation; (2) performance and flows; (3) performance persistence; (4) market timing; (5) window dressing; (6) mutual fund contracting
2. Pension Funds: (1) the US pension fund system; (2) defined contribution system; (3) defined benefit system

Unconstrained Investors
1. Hedge Funds: (1) hedge fund compensation; (2) organizational structure of hedge funds
2. Hedge Fund Strategies: (1) risk arbitrage; (2) convertible arbitrage; (3) fixed-income arbitrage; (4) hedge fund performance evaluation
### List of Topics by Week

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### Textbook
Due to the nature of the class, there is no required textbook for the course. Journal articles will be assigned as background reading materials. A course pack of case collections constitutes part of the homework assignments as well as the basis of class discussion.

### Office Hours
Office hours are Tuesdays and Thursdays, 11:00 – 12:00am. If you want to see me outside office hours, please make an appointment so I can make sure we would not miss each other. The best way to reach me is via e-mail (pgao@nd.edu).

### Grading Policy
**Homework Problem Sets (200 points)**

Four to five homework problem sets will be assigned throughout the course, and the due day will be clearly noted on the homework problem sets. Each homework problem set will be graded as check (v; meeting expectation, the default, 80% - 90%), check plus (v+; truly outstanding, > 90%) and check minus (v-; below expectation, < 80%), and sometimes in conjunction with a score. You should hand in the homework problems before the specified deadlines and they will be graded. No late homework assignment will be accepted unless you receive my explicit approval in advance. You may discuss with each other about the homework, the homework assignments should be done on the basis of a group of 3 to 5 students.

**Midterm Exam (400 Points)**

**Final Exam (400 Points)**

All exams will be closed book, but a sheet with particularly difficult formulas will be attached to the exam. The formula sheet will be passed out several days prior to the exam. In addition, you can bring one extra formula sheet made by yourself (8-1/2 x 11” size; and yes, on both sides.) Approximately 30% of the problems on the midterm and final exams will be taken from the homework and sample exams with minor changes.
Sample exams will be posted on the course website at least one week before the exam; and the solutions to the sample exam will be posted shortly afterward. You should attempt to solve the sample exams without looking up the solutions first.

There is no makeup exam unless I explicitly approve your absence due to unusual circumstances.

**Course Grade**
The total score from the class is computed as follows:

\[
\text{Total Score} = \text{Homework} + \max (\text{Midterm} + \text{Final}, \text{Final Exam Score} \times 2)
\]

**Class Etiquettes**
Attendance of classes is not taken. However, you are responsible for all the materials discussed. I expect everyone in class to pay attention to what is going on in class, and not to distract others. I don’t mind eating or drinking in class (as long as you do so quietly!). Please do not work on computers, reading papers, or engage in other classroom unrelated activities.

**Honor Code**
All individual and group activities must adhere to the Honor Code in every respect, including each group member having a full understanding of any written material that includes a student’s name. For example, even though one student may do the principal work on a spreadsheet, all group members are expected to fully understand the spreadsheet and be able to answer questions regarding it or any other aspect of the group’s product.