MANAGEMENT

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https://som.yale.edu/programs/phd
M.A., M.Phil., Ph.D.

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Participating faculty from the School of Management Julia DeBenigno, Cydney Dupree, Soheil Ghili, Paul Goldsmith-Pinkham, Zeqiong Huang, Ivana Katic, Balázs Kovács, Michael Kraus, Song Ma, Aniko #ry, Taly Reich, Thomas Steffen, Alexander Zentefis, Jidong Zhou

FIELDS OF STUDY

Current fields include accounting, financial economics, marketing (behavioral), marketing (quantitative), operations, and organizations and management.

CORE REQUIREMENTS FOR THE PH.D. DEGREE

All students are required to take their individual program's seminar and workshop series in every term throughout their years in residence. These are not counted as part of the required number of courses specified below for each of the individual programs. All of the programs are full-time, requiring that all students be in residence at Yale during the academic year as well as the summer months. Teaching is considered to be an important part of the doctoral program in Management. Students are expected to serve as teaching fellows in one term of their residence. Additional requirements in each program of study are listed below.

SPECIAL REQUIREMENTS IN ACCOUNTING

The specialization in Accounting prepares students to become accounting scholars engaged in research and teaching at the highest levels in the general areas of financial information and contracting within and across organizations. It is designed to develop strong theoretical and empirical skills. There is heavy emphasis on students’ original research, which is supported through courses, presentations, feedback, joint work, and informal interactions with the faculty and fellow students in accounting and other disciplines.

During the first two years of the program, students are required to take the following courses: General Economic Theory: Microeconomics (ECON 500 and ECON 501), Econometrics I (ECON 550), Econometrics II (ECON 551), Seminar in Accounting Research I (MGMT 700), Seminar in Accounting Research II (MGMT 701), Seminar in Accounting Research III (MGMT 702), and Seminar in Accounting Research IV (MGMT 704). Students typically take the four Economics courses and two of the Accounting Research seminars during their first year, and the two remaining Accounting Research seminars and four other courses during their second year. Students may substitute graduate-level courses in statistics for ECON 550 and ECON 551 with permission from their faculty adviser. The summer months at the end of years one and two are devoted to completing original research papers (due by September 1 and October 1, respectively).

In addition, students should fulfill the following requirements: audit the Accounting Research seminars (MGMT 700, MGMT 701, MGMT 702, and MGMT 704) in years three and four; pass all other Ph.D.-level seminars taught by Accounting faculty in years one to four; register for the Accounting seminar (MGMT 781-02) and the Accounting pre-seminar (MGMT 782-02) in years one to four; and register for the Finance pre-seminar (MGMT 782-01) in years one to four.

After four terms in the program (typically by mid-June), students take a faculty-written, three-day qualifying exam aimed at assessing their intellectual readiness to start dissertation research. They remain in residence for five years while they receive a stipend. During this period each student is assigned to a member of the faculty as a research assistant. Students in their third term will also have the option of accepting teaching assistantships. To register for their seventh term of study, students submit an approved dissertation prospectus. Students are expected to complete their dissertations by the end of the sixth year but may petition for a seventh year of study if academically necessary.
SPECIAL REQUIREMENTS IN FINANCIAL ECONOMICS

The specialization in Financial Economics prepares students to launch a career in academic finance. Students should seek out faculty with whom they may wish to work early in the process to ensure a smooth transition from one stage of the program to the next.

Students are required to take twelve courses. In the first year of study, students are expected to take Financial Economics I (MGMT 740), Financial Economics II (MGMT 741), General Economic Theory: Microeconomics (ECON 500 and ECON 501), Econometrics I (ECON 550), and Econometrics II (ECON 551). Some students with limited math or economics backgrounds may be advised to postpone taking some of these courses until their second year of study. In addition, students are expected to take the Ph.D.-level courses offered by the Finance faculty. Availability and topics vary by year. Students must receive a grade of Honors in at least one full-year or two term-long graduate courses. Furthermore, students must have no more than one grade of Pass in these courses. To be admitted to candidacy, a student must pass both Financial Economics I and II as well as the topic courses offered in the year the student takes the qualifying exam and maintain an HP average in their courses.

Research papers Students are expected to write original research papers during the summers after their first and second years of study. Both papers must be solo authored. The topic of the first-year paper requires written approval from the student's faculty adviser; the deadline to submit that approval to the DGS is May 15. The paper itself is due to the director of the program by the second Monday in August. The second-year paper proposal must be approved by May 15 by a member of the Finance faculty who has agreed to supervise the project. The paper itself is due to the student's adviser by the second Monday in August.

Students whose papers receive a failing grade may be dismissed from the program.

Qualifying exam The two-part qualifying exam covers the Ph.D.-level Finance courses taken in the first two years of study. Unless given a waiver by the director of the Finance Ph.D. program, students must take the relevant section of the qualifying exam before the last business day before June 15 of their first and second years of study. A student who fails either section of the exam may retake it once, by the final business day before August 1. A student who fails either section of the exam a second time will be dismissed from the program.

Dissertation Students must write a dissertation prospectus and assemble a dissertation committee in order to register for a sixth term of study. The committee must have at least three members, at least two of whom must be from the Finance faculty unless a waiver is given by the program director. If a student cannot form a committee prior to the start of the sixth term of study, the student will be withdrawn from the program.

Prior to submission of the dissertation, students must pass a public defense. Before a public defense can be scheduled, all three members of the committee must agree that the student and the dissertation itself are ready. All members of the faculty are invited to a dissertation defense. After the defense, the faculty in attendance will meet to discuss the dissertation. The faculty may pass or fail the student. In addition, they may grant a conditional pass when they believe there are only minor problems with the dissertation and delegate the final decision regarding corrections of those problems to the committee.

SPECIAL REQUIREMENTS IN MARKETING (BEHAVIORAL)

Students are required to take twelve Ph.D.-level courses in their first two years of study: three behavioral marketing core courses (MGMT 753, MGMT 754, MGMT 758; two empirical methods courses that cover the topics of experimental design and statistics; two breadth courses that cover the topics of quantitative marketing and microeconomics; and five electives in behavioral sciences (example course subjects include social cognition, cognitive development, cognitive science of morality, foundations of neuroscience, cognitive science of pleasure, psychology of free will, or an independent study course). Students may take other courses as electives if the faculty adviser permits. Students are expected to obtain at least two Honors grades and a High Pass average in the twelve courses.

Research papers Students are expected to write original research papers during the summers after their first and second years of study. Either paper may be coauthored with other students or faculty. Students select a faculty adviser for each paper and work with the adviser during the summer to develop the paper. The paper is due by the start of the fall term following that summer (i.e., the start of the fall term of the second year for the first-year paper and the start of the fall term of the third year for the second-year paper). The paper must be presented in the Behavioral Marketing Research Workshop during the fall term of the academic year in which the paper was due. These two research papers are considered to be the student’s qualifying exam.

Dissertation The dissertation typically consists of two or three essays which are completed in the student’s third through fifth years of study. Prior to starting work on the dissertation, the student must write a dissertation prospectus and finalize the dissertation committee, consisting of the principal adviser and three other faculty members. The prospectus must be completed and accepted by the dissertation committee by the end of the student’s third year of study.

Prior to submission of the dissertation to the Graduate School, the student must defend it before the student’s committee, other faculty members, and interested doctoral students. The faculty could accept the dissertation as is, require minor changes, or reject the dissertation and ask the student to redo one or more essays.

SPECIAL REQUIREMENTS IN MARKETING (QUANTITATIVE)

Students are required to take twelve Ph.D.-level courses in their first two years of study: two microeconomics courses (ECON 500 and ECON 501); two empirical methods courses (ECON 550 and ECON 551); three depth courses (MGMT 750, MGMT 755, MGMT 753, MGMT 754, or MGMT 758); and five electives (from ECON 520, ECON 521, ECON 527, ECON 530, ECON 531, ECON 552, ECON 553,
ECON 554, ECON 555, ECON 557, ECON 600, ECON 601; MGT 611; MGMT 703; S&DS 551, S&DS 565). Students may take some other courses as electives if the faculty adviser permits. Students are expected to obtain at least two Honors grades and a High Pass average in the remaining twelve courses.

If a student has requested and received a waiver for any of the above courses, the total number of required courses drops by the number of waivers received.

**Research papers** Students are expected to write original research papers during the summers after their first and second years of study. Either paper may be coauthored with other students or faculty. Students select a faculty adviser for each paper and work with the adviser during the summer to develop the paper. The first paper must be presented in the Ph.D. Student Research Workshop during the fall term of the student’s second year of study. The second paper must be presented in the Ph.D. Student Research Workshop in the student’s third year of study.

**Qualifying exam** Students must successfully complete the qualifying exam in Marketing at the end of their second year of study. The exam is administered no later than June 15. A student who fails to successfully complete the exam may retake it once; retakes are generally scheduled during August of the year in which the student first took the exam. A second failure results in dismissal from the program.

**Dissertation** The dissertation typically consists of three essays which are completed in the student’s third through fifth years of study. Prior to starting work on the dissertation, the student must write a dissertation prospectus and finalize the dissertation committee, consisting of the principal adviser and three other faculty members. The prospectus must be completed and accepted by the dissertation committee by the end of the student’s third year of study.

Prior to submission of the dissertation to the Graduate School, the student must defend it before the student’s committee, other faculty members, and interested doctoral students. The faculty could accept the dissertation as is, require minor changes, or reject the dissertation and ask the student to redo one or more essays.

**SPECIAL REQUIREMENTS IN OPERATIONS**

Students are required to take at least twelve courses: two core courses (ECON 500 and ENAS 649), typically completed in the first year of study; five methods courses (ECON 501; ENAS 530, S&DS 541, S&DS 542, S&DS 551); two operations modeling courses (MGMT 720, MGMT 721), completed in the second year of study; and at least three elective courses scheduled in consultation with the student’s course adviser. Under unusual circumstances and with the approval of both the adviser and the DGS, students may fulfill some of the methods course requirements with alternative offerings.

**Research paper** During the summer after the first year of study, each student collaborates on a research paper with another student. During the summer after the second year of study, each student works on a research paper under the guidance of a faculty member. Students are expected to write original research papers during the summers after their first and second years of study. Either paper may be coauthored with other students or faculty. Students select a faculty adviser for each paper and work with the adviser during the summer to develop the paper. The first paper must be presented in the Ph.D. Student Research Workshop during the fall term of the student’s second year of study. The second paper must be presented in the Ph.D. Student Research Workshop in the student’s third year of study.

**Qualifying exam** Students must successfully complete the qualifying exam in Marketing at the end of their second year of study. The exam is administered no later than June 15. A student who fails to successfully complete the exam may retake it once; retakes are generally scheduled during August of the year in which the student first took the exam. A second failure results in dismissal from the program.

**Dissertation** The dissertation typically consists of three essays which are completed in the student’s third through fifth years of study. Prior to starting work on the dissertation, the student must write a dissertation prospectus and finalize the dissertation committee, consisting of the principal adviser and three other faculty members. The prospectus must be completed and accepted by the dissertation committee by the end of the student’s third year of study.

Prior to submission of the dissertation to the Graduate School, the student must defend it before the student’s committee, other faculty members, and interested doctoral students. The faculty could accept the dissertation as is, require minor changes, or reject the dissertation and ask the student to redo one or more essays.

**SPECIAL REQUIREMENTS IN ORGANIZATIONS AND MANAGEMENT**

Upon admission, each student is assigned a faculty adviser who helps the student design an individualized program that prepares the student to do research in the student’s area of interest. All students must complete twelve courses: two methods courses (PLSC 503 and PLSC 504; PLSC 505, ECON 550 and ECON 551; or, students who believe they will primarily do experimental research may take PLSC 503 and a methods course in psychology such as PSYC 518); four depth courses (MGMT 731, MGMT 733, MGMT 734, MGMT 736); four social science courses in psychology or sociology (e.g., PSYC 505, PSYC 509, PSYC 557, PSYC 621; SOCY 511, SOCY 665); and one breadth course outside the student’s area of study, chosen in consultation with the student’s adviser; and one additional elective chosen in consultation with the adviser. Beginning in their third year, students are also expected to present in the Organizations and Management Workshop once per year.

**Research papers and qualifying exam** During the summer after the first year of study, each student collaborates on a research paper with a faculty member. An initial draft of the paper should be completed by September 30, and the completed paper should be approved by two faculty members and submitted by 5 p.m. of the last day of classes of the fall term. Students will present these coauthored papers in the Ph.D. Student Research Workshop in the fall of the second year.

During the summer after the second year of study, each student works on a research paper under the guidance of a faculty member. An initial draft of the paper should be submitted by 5 p.m. of the last business day in October of the student’s third year of study. Students
will present these papers in the Ph.D. Student Research Workshop in their third year of study. The second summer paper is considered the qualifying exam and will be vetted by both the Organizations and Management faculty and the DGS.

**Dissertation** Once students have completed their course work, first-year paper, and qualifying exam, they may apply for admission to candidacy. As part of this application, students must submit a proposal for their planned dissertation and form a four-person dissertation committee to advise this research. Admission to candidacy depends on approval of the proposed plan of study and a comprehensive review of the student's performance by the faculty; completion of the requirements listed above does not guarantee admission. Students must be admitted to candidacy prior to their fourth year of study.

**JOINT J.D./PH.D. IN FINANCE**

Students in the joint J.D./Ph.D. in Finance program must meet the following requirements:

**Course requirements** Ph.D.: Eight courses, including the following seven required courses: ECON 500; ECON 501, which covers an introduction to game theory; ECON 550 and ECON 551; MGMT 740; MGMT 742; and MGT 545. Note: Students may substitute MGMT 741 for MGT 545. If MGMT 742 is not offered in the student's second year in the program, the student may choose in its place one of the following graduate finance courses: MGMT 745, MGMT 747, or MGMT 748. J.D.: 71 credit units at Yale Law School, including the required first-term courses taken in one term (Contracts, Torts, Civil Procedure, and Constitutional Law); Criminal Law; a course satisfying the legal ethics requirement; and Business Organizations.

**Predissertation writing requirements** (1) A paper fulfilling the Ph.D. second-year research paper requirement; and (2) a paper fulfilling one of the J.D. writing requirements (substantial or supervised analytic writing). Note: an accepted Ph.D. second-year research paper will fulfill the student's remaining J.D. paper requirement by registration for independent research credit with the student's law school faculty adviser. One of these papers must qualify as the student's prospectus.

**Qualifying examination in finance** The section of the qualifying exam pertaining to MGMT 740 and MGMT 742 (or the doctoral finance course taken in place of MGMT 742 when it is not offered in the student's second year in the program). The qualifying exam is taken after the student has completed all required graduate finance courses.

**Dissertation and oral defense**

**MASTER’S DEGREES**

**M.Phil.** A student who is admitted to candidacy will be eligible to receive the M.Phil. upon the recommendation of the program's faculty and the approval of the Graduate School.

**M.A. (en route to the Ph.D.)** A student who completes the required courses with a High Pass average and the first-year paper will be eligible for the M.A. degree upon the recommendation of the program's faculty and the approval of the Graduate School.

Program materials are available upon request to the Director of Graduate Studies, Management, Yale University, PO Box 208200, New Haven CT 06520-8200. For information on the M.B.A. degree, please contact the admissions office at the School of Management.

**COURSES**

**MGMT 702a, Seminar in Accounting Research III**  Anya Nakhmurina, Frank Zhang, Jake Thomas, Raphael Duguay, Edward Watts, and Thomas Steffen

Study of empirical accounting research that covers topics such as valuation, pricing of accounting information, earnings management, reporting issues, accounting regulation, analyst forecasts, and auditing.

**MGMT 704b, Seminar in Accounting Research IV**  Jake Thomas and Frank Zhang

Study of empirical accounting research that covers topics such as relation between accounting information and stock prices, analyst forecasts, taxes, and incentives to manage accounting information.

**MGMT 720a / ECON 675a, Models of Operations Research and Management**  Vahideh Hosseinkhah Manshadi

The course exposes students to main stochastic modeling methods and solution concepts used to study problems in operations research and management. The first half of the class covers analysis of queuing models such as Markovian queues, networks of queues, and queues with general arrival or service distributions, as well as approximation techniques such as heavy traffic approximation. The second half focuses on control of stochastic processes; it covers finite and infinite-horizon dynamic programming problems, and special classes such as linear quadratic problems, optimal stopping, and multi-armed bandit problems. ½ Course cr

**MGMT 721b, Modeling Operational Processes**  Staff

**MGMT 737b, Applied Empirical Methods**  Paul Goldsmith-Pinkham

**MGMT 740a / ECON 670a, Financial Economics I**  Stefano Giglio

Current issues in theoretical financial economics are addressed through the study of current papers. Focuses on the development of the problem-solving skills essential for research in this area.

**MGMT 742b, Continuous Time Finance**  Staff

This is a doctoral-level course in the empirical analysis of financial data. The course covers some of the more important works in empirical asset pricing, beginning with the early development and tests of the efficient market paradigm, but focuses on modern evidence and
research on market efficiency, trading profits, and information-based arbitrage. The course also covers common empirical methods and databases used in asset pricing. The course requires the reading of three to five research papers per week, presentations and class participation in discussions, referee reports, and a final empirical paper.

**MGMT 744b, Household Finance**  James Choi
This course introduces students to the field of household finance, the study of how households interact with financial instruments and markets. The course covers theory and evidence in topics such as lifecycle portfolio allocation and saving, household debt, financial product and institutional design, and financial advice. An important secondary objective of the course is to teach students the art of empirical research: (1) identifying important and interesting questions, (2) identifying the challenges to answering those questions convincingly, (3) understanding common empirical methodologies to overcome those challenges, along with each method's strengths and weaknesses, and (4) learning about settings and data sources that allow the application of these methodologies.

**MGMT 746b, Financial Crises**  Gary Gorton
An elective doctoral course covering theoretical and empirical research on financial crises. The first half of the course focuses on general models of financial crises and historical episodes from the nineteenth and twentieth centuries. The second half of the course focuses on the recent financial crisis. Prerequisites: MGMT 740 and 741 (doctoral students in Economics may substitute the core microeconomics sequence), and permission of the instructor.

**MGMT 749a, Financial Econometrics**  Bryan Kelly
This seminar examines research on the psychology of judgment. We focus on identifying factors that influence various judgments and compare them to which factors individuals want and expect to drive their judgments. Topics of discussion include judgment heuristics and biases, confidence and calibration, issues of well-being including predictions and experiences, regret and counterfactuals. The goal is threefold: to foster a critical appreciation of existing research on individual judgment, to develop the students' skills in identifying and testing interesting research ideas, and to explore research opportunities for adding to existing knowledge. Students generally enroll from a variety of disciplines, including cognitive and social psychology, behavioral economics, finance, marketing, political science, medicine, and public health.

**MGMT 754a, Designing and Conducting Experimental Research**  Gal Zauberman
This course discusses how to effectively generate, design, evaluate, report, and present behavioral research. Topics include theory development, idea generation, increasing statistical power, internal vs. external validity, between vs. within-subjects designs, psychological measurement, survey research methods, the publication process, writing high-quality abstracts and journal articles, and presenting research findings. This course offers a very practical, learning-by-doing approach. In addition to discussing the weekly readings, class sessions offer students ample opportunity to practice (1) generating appropriate and effective experimental designs, (2) generating high-quality survey questions, (3) critiquing and reviewing existing research, and (4) presenting research findings. This course is primarily for Ph.D. students intent on pursuing an academic career conducting behavioral research in psychology, marketing, organizational behavior, or a related field.

**MGMT 754b / ECON 672b, Behavioral Finance**  Nicholas Barberis
Much of modern financial economics works with models in which agents are rational, in that they maximize expected utility and use Bayes's law to update their beliefs. Behavioral finance is a large and active field that studies models in which some agents are less than fully rational. Such models have two building blocks: limits to arbitrage, which make it difficult for rational traders to undo the dislocations caused by less rational traders; and psychology, which catalogues the kinds of deviations from full rationality we might expect to see. We discuss these two topics and then consider a number of applications: asset pricing (the aggregate stock market and the cross-section of average returns); individual trading behavior; and corporate finance (security issuance, corporate investment, and mergers).

**MGMT 756a, Behavioral Decision-Making II: Judgment**  Nathan Novemsky and Ravi Dhar
This seminar examines research on the psychology of judgment. We focus on identifying factors that influence various judgments and compare them to which factors individuals want and expect to drive their judgments. Topics of discussion include judgment heuristics and biases, confidence and calibration, issues of well-being including predictions and experiences, regret and counterfactuals. The goal is threefold: to foster a critical appreciation of existing research on individual judgment, to develop the students' skills in identifying and testing interesting research ideas, and to explore research opportunities for adding to existing knowledge. Students generally enroll from a variety of disciplines, including cognitive and social psychology, behavioral economics, finance, marketing, political science, medicine, and public health.

**MGMT 757a, Behavioral Finance**  Nicholas Barberis
The course explores foundational topics in behavioral economics and discusses the dominant prescriptive models (which propose what decision makers should do) and descriptive models (which aim to describe what decision makers actually do). The course incorporates perspectives from economics, psychology, philosophy, decision theory, and finance, and engages long-standing debates about rational choice.

**MGMT 758a or b, Workshop**  Staff
781-01, Accounting/Finance Workshop; 781-03, Marketing Workshop; 781-04, Organizations and Management Workshop; 781-05, Operations Workshop.

**MGMT 759a, Workshop**  Staff
782-01, Accounting Doctoral Student Pre-Workshop Seminar; 782-02, Financial Economics Doctoral Student Pre-Workshop Seminar; 782-03, Marketing Doctoral Student Pre-Workshop Seminar; 782-04, Organizations and Management Doctoral Student Pre-Workshop Seminar; 782-05, Operations Doctoral Student Pre-Workshop Seminar.
MGMT 791a or b, Independent Reading and Research  Staff
By arrangement with individual faculty.