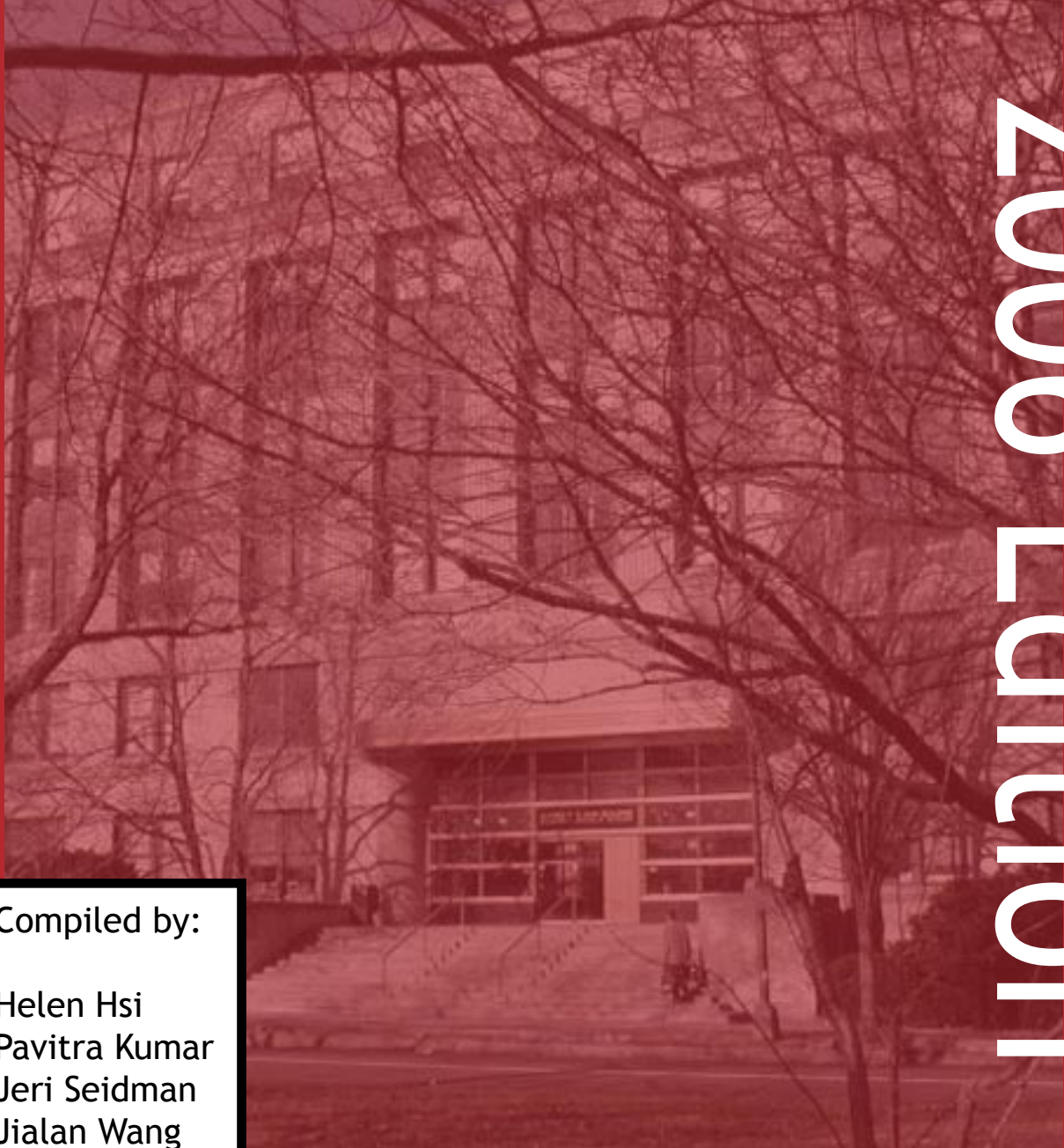


Sloan School of Management PhD Student Handbook

2006 Edition

Compiled by:

Helen Hsi
Pavitra Kumar
Jeri Seidman
Jialan Wang



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Introduction

Dear Fellow Sloan Student:

We created this document out of a desire to provide a practical guide to starting life as a graduate student at the Sloan School. We have tried to cover in some detail the issues specific to Sloan students and to provide starting points for finding answers to the more general questions you may have. We welcome any comments or suggestions you might have that would help us improve this resource for future students. We hope you find this useful, and we look forward to meeting you in the fall!

All the best,

Helen (not pictured)
Pavitra
Jeri
and
Jialan



Other Resources

Here is a list of websites and other resources that you might find helpful.

Admitted Graduate Students' Guide

http://web.mit.edu/admissions/graduate/planning_guide/index.html

A list of important forms and documents for incoming graduate students.

Practical Planning Guide

<http://web.mit.edu/admissions/graduate/pdfs/MITplanguide.pdf>

A guide and checklist for all new MIT graduate students.

WebSIS

<http://web.mit.edu/admissions/graduate/pdfs/MITplanguide.pdf>

WebSIS is the central web-based student information system for students, faculty, and administrators at MIT. This site provides students with access to their academic, financial, and biographical records as well as the ability to update their address information and pre-register for classes. In addition, the site provides links to the academic calendar and to general MIT academic and financial information. In order to access secure information on WebSIS, you must install a personal MIT web certificate on your computer (see FAQ), which provides user authentication. After you have been admitted to MIT Sloan, you can check WebSIS for important information and checklists for new students.

Graduate Students' Office

<http://web.mit.edu/gso/>

The GSO has information on financial aid, policies and procedures for all incoming graduate students.

International Students Office

<http://web.mit.edu/iso/www/>

The international students office provides many resources and services especially for international students. The website includes a guide and FAQ for incoming international students.

Student Financial Services

http://web.mit.edu/finaid/fin_aid/index.html

The Graduate Student Council

<http://web.mit.edu/gsc/www/>

The graduate student council website has a lot of useful information for graduate students, including the schedule for the new student orientation in the fall.

Sloanspace

<http://sloanspace.mit.edu/>

Sloanspace is an online system that serves the Sloan community, which you can access at with

the user id and password that will be assigned to you soon after you accept the admission offer from Sloan. Sloanspace has a variety of functions that allow you to keep and share files, keep a calendar, download files for classes, etc. In particular, there is a lot of information for new students under the panel Communities -> Program - All PhD Students - > Info for New Students. Also, look under Communities -> Student Technology Services for computer-related information.

If you would like your photos and information to appear in the Sloan Facebook for the fall, be sure to submit this information as soon as you can by going to “edit my profile” on the control panel.

How To Get Around MIT

<http://web.mit.edu/htgamit/www/index.html>

How to Get Around MIT is a handbook published by undergraduates which provides fairly comprehensive information about many aspects of life at MIT. You should be able to find a copy for free at Sharon’s office.

Important People to Know

Sharon Cayley

PhD Program Coordinator

scayley@mit.edu

(617) 253-7188

E60-226

Sharon is the most senior member of administrative staff, and should be approached if students have problems or important queries regarding enrollment, registration or graduation issues, conflicts of a more serious or personal nature, and so on.

Hillary Ross

Administrative Assistant

hross@mit.edu

(617) 253-8957

Hillary is Sharon’s assistant and should be your first point of contact for more routine administrative queries.

Birger Wernerfelt

PhD Program Chair

bwerner@mit.edu

(617) 253-7192

E56-326

The PhD program chair is a faculty member who oversees all aspects of the Sloan PhD program.

Tammy Santora

Senior Financial Analyst

tsantora@mit.edu

(617) 253-0372

E40-171

Tammy deals with all types of questions regarding funding and financial assistance for PhD students, fellowship/stipend payments, TA/RA salaries, and so on.

The Dean's Office

The Sloan Dean's office is on the fourth floor of E52. There are five dean positions – the head Dean and the two Deputy Deans are rotating members of the Sloan faculty, and the two senior associate deans are permanent nonfaculty positions. The current Dean is Richard Schmalensee, a professor of Economics and Management at Sloan. Steve Eppinger is the Deputy Dean in charge of the doctoral program, and Paul Osterman is the Deputy Dean in charge of the master's program. The two Senior Associate Deans are Donna Behmer and Allen White. The students usually don't need to interact with the Dean's Office directly, but it is a good idea to know who they are.

Area Officers

The area officers deal with office space, TA / RA appointments, budgeting, and other issues for the specific departments within Sloan. Once you get to campus, it's a good idea to get in touch with your area officer so you can get your assigned office and take care of other departmental issues.

Applied Economics, Finance, and Accounting:	Behavioral and Policy Sciences:	Management Science Area
Svetlana Sussman	Pam Liu	Kim LePage
ssussman@mit.edu	pliu@mit.edu	klepage@mit.edu
(617) 253-8359	(617) 253-6669	(617) 253-6616
E52-459	E52-534	E53-349

Sloan Technology Services

Sloan Technology Services will provide you with your laptop and service both the hardware and any school-related software. In late August, you will have a half-day session to receive your laptop, create passwords and network connections, etc. Your computer will have basic Microsoft programs, wireless capabilities, and a periodic backup service; data processing programs are available for download from Sloanspace (see the FAQ area for links).

Data Questions (SAS, STATA, UNIX, extra storage, etc.)

Ray Faith
faith@mit.edu
(617) 253-6195
E52-025B

Sloan PhD Student Directory

Economics, Finance, and Accounting

Financial Economics

Manuel Adelino	madelino@sloan.mit.edu	x3-4057	E52-416	Portugal
Jack Bao	jackbao@sloan.mit.edu	x3-3919	E52-458	US
Tara Bhandari	pkumar@sloan.mit.edu	x3-3637	E52-442	US
Kevin Chu	kevin_chu@sloan.mit.edu	x3-4057	E52-416	Hong Kong
Alejandro Drexler	adrexler@sloan.mit.edu	x3-3637	E52-442	Chile
Alex Edmans	aedmans@sloan.mit.edu	x3-3919	E52-458	Gr. Britain
Kan Huang (1st year)				China
Fadi Kanaan	fadi@sloan.mit.edu	x3-3919	E52-458	Lebanon
Jiro Kondo	jekondo@sloan.mit.edu	x3-4057	E52-416	Canada
Pavitra Kumar	pkumar@sloan.mit.edu	x3-3637	E52-442	Gr. Britain
Anya Obizhaeva	obizhaeva@sloan.mit.edu	x3-3919	E52-458	Russia
Dimitris Papanikolaou	d_pap@sloan.mit.edu	x3-4057	E52-416	Greece
Zhihua Qiao (1st year)				China
Weiyang Qiu	wyqiu@mit.edu	x3-3919	E52-458	China
Oleg Rytchkov	rytchkov@sloan.mit.edu	x3-3637	E52-442	Russia
Mary Tian	mht@mit.edu	x3-3919	E52-458	US
Ngoc-Khanh Tran (1st year)				Vietnam
Jialan Wang	jialanw@sloan.mit.edu	x3-3637	E52-442	US

Accounting

Amit Koshal	akoshal@sloan.mit.edu	x3-3919	E52-343C	Canada
Michelle Liu	michliu@sloan.mit.edu	x3-9849	E52-343F	US
Yuri Loktionov	yurilock@sloan.mit.edu	x3-9849	E52-343F	Russia
Mihir Mehta	mnm@sloan.mit.edu	x3-3919	E52-343C	Australia
George Papdakis	papadak@sloan.mit.edu	x3-9849	E52-343C	Greece
Karthik Ramanna (1st year)				India
Konstantin Rozanov	rozanov@sloan.mit.edu	x3-3919	E52-343C	Russia
Jeri Seidman	jksdiema@sloan.mit.edu	x3-3919	E52-343C	US

Management Science

Information Technologies

Sinan Aral	sinan@sloan.mit.edu	x8-5582	E53-324	US
Tanu Ghosh	tanu@sloan.mit.edu	x36629	E53-314	India
Heekyung Kim (1st year)				Korea
Adam Saunders	adamrs@sloan.mit.edu	x8-5582	E53-324	US
Lynn Wu	linwu@mit.edu	x36629	E53-314	US

Marketing

Leonard W.C. Lee	leonardl@sloan.mit.edu	x3-0159	E56-345E	Singapore
Nathan Fong	nmfong@mit.edu	x3-7353	E56-345D	USA
Leonard Lee	leonardl@mit.edu	x3-0159	E56-345E	Singapore
Boris Maciejovsky	maciejovsky@sloan.mit.edu	x3-2268	E56-345B	Austria

Daniel Mochon	daniel_mochon@sloan	x3-0159	E56-345E	US
Han Nguyen (1st year)				US
Matthew Selove	mselove@sloan.mit.edu	x3-3198	E56-345C	US
Kristina Shampanier	kshampan@sloan.mit.edu	x33198	E56-345C	Russia
Raymond Weaver	rweaver@sloan.mit.edu	x33198	E56-345C	US

Operations Management

Thida Aye	thita_a@sloan.mit.edu	x3-3597	E53-356A	Myanmar
Hongmin Li	hmlu@sloan.mit.edu	x3-3484	E53-384	China
Kevin O'Laughlin (1st year)				US
Martin Quinteros (1st year)				Chile
Tor Schoenmeyr	tor@sloan.mit.edu	x3-0956	E53-394	US
Anshuman Tripathy	atripathy@sloan.mit.edu	x8-5586	E53-388	India

System Dynamics

Gokhan Dogan	gdogan@sloan.mit.edu	x36638	E53-364	Turkey
Joe Chiaojeñ Hsueh (1st year)				Canada
John Lyneis	jlyneis@mit.edu	x38094	E53-358	US
Daniel McCarthy	djmc@mit.edu	x38094	E53-358	US
Kawika Pierson				US
Timothy D. Quinn	tdquinn@sloan.mit.edu	x35585	E53-358A	US
Jeroen Struben	jjrs@sloan.mit.edu	x34361	E53-376	Netherlands

Behavioral & Policy Sciences

Institute For Work & Employment Research

Zev Eigen	zeveigen@mit.edu		E52-532	US
John Paul Ferguson	jpferg@sloan.mit.edu	x6370	E52-509	US
Ryan Hammond (1st year)				US
Helen Hung Ying Hsi	helenhsi@sloan.mit.edu		E52-507	US
Ruthanne Huising	huising@sloan.mit.edu	x3857	E52-509	Canada
Eun-suk Lee	eunsuk@mit.edu		E53-580	Korea
Adam Seth Litwin	aslitwin@sloan.mit.edu	x4913	E52-531	US
Seth Pipkin (1st year)				US
Fei Qin	feiqin@sloan.mit.edu	x87269	E52-507	China
Kyoung-Hee Yu	khyu@sloan.mit.edu	x33940	E52-533	Korea

Technological Innovation & Entrepreneurship

Phillip Anderson (1st year)				US
Sung Joo Bae	sjbae@sloan.mit.edu		E52-557	Korea
Charles Eesley	eesley@mit.edu		E52-380	US
Steven Kahl	skahl@sloan.mit.edu	x6684	E52-509	US
Vikram Mansharamani	vmanshar@sloan.mit.edu	x36620	E52-557	US
Ethan Mollick	emollick@sloan.mit.edu	x3857	E52-509	US

Organization Studies

Group

Joelle Evans	joelle@mit.edu		E52-580	France
Jason Greenberg	jason_06@mit.edu	x3-4935	E52-532	US
Jason Jay	jjay@mit.edu		E52-580	Greece

Styliani Kounelaki (1st year)				Greece
Melissa Mazmanian	melmaz@sloan.mit.edu	x36370	E52-509	US
Kate Parrot (1st year)				US
Maria Quijada	marialeq@sloan.mit.edu	x33721	E52-539	Venezuela
Brian Rubineau	brubineau@sloan.mit.edu	x6680	E52-511	US
Catherine Turco	cturco@mit.edu		E53-414	US
Heng Xu	hengxu@sloan.mit.edu	x33857	E52-509	China
Strategy & International Management				
Rodrigo Canales	rcanales@sloan.mit.edu	x6684	E52-509	Mexico
Rafael Lucea	rafel@mit.edu	x33721	E52-539	Spain
Ramana Nanda	rnanda@sloan.mit.edu	x33721	E52-539	India
Yanbo Wang	yanbo@mit.edu	x34023	E52-511	China

Frequently Asked Questions

1. How do I get my office at the Sloan School of Management?

Once you get to campus, contact the following people from each department to get your office:

Financial Economics and Accounting: Svetlana Sussman ssussman@mit.edu, E52-459

BPS: Carrie O'Brien, E52-530, has keys to the offices and the 5th floor suite. A \$15.00 deposit is required for each key and will be returned when you return the key. Checks only! Make checks payable to MIT.

For other departments, check with your area officer (see Important People to Know)

2. Where / When do I get my fellowship check?

You can get your fellowship check one week after registration day each semester at Student Services in room 11-120, (you will need your MIT ID card to collect the check). You can also get your check direct deposited by filling out a special form; please contact Tammy Santora at tsantora@mit.edu for further information.

3. Do I have to pay taxes on my fellowship?

Yes! The salaries of TAs, RAs, and fellowships, in excess of books and fees, are subject to U.S. federal and state taxation, but taxes are only withheld from TA and RA stipends. (Fees do not include room and board.) Taxes are not withheld from Fellowship stipends awarded to U.S. citizens, but may be withheld from the paychecks for international students unless they file a form each year to claim exemption from U.S. taxation. International students should check Tax Treaty information specific to their country on file in the Payroll Office.

All graduate students should file a tax-withholding form with the Payroll Accounting Office, (room NE49-3131, <http://web.mit.edu/cao/www/offices/payroll.htm>), as early in the semester as possible. TAs and RAs are both paid on a monthly payroll: one tax form will suffice. TAs and RAs are paid at the end of each month. Students on Fellowships receive stipends once a semester at the beginning of the term (September 1 or January 16): this is a separate payroll system. (The first tax payment deadline for US students on their fellowship is September 15th of each year). Tax-withholding forms must be renewed at regular intervals in the Payroll Office. The Institute offers Tax Preparation Seminars each February (one for international students and one for U.S. citizens or U.S. permanent residents).

4. Are there any math refresher courses I can enroll in before starting at MIT?

Yes. Beginning the first Monday in August, the MIT Department of Economics hosts a 3 week math camp, (Course name: Econ 14.00), to prepare incoming PhD students. If you will be taking economics courses, you may be allowed to attend. Topics include Basic Properties of Numbers, Functions, and Space, Linear Algebra and Matrices, Calculus of Several Variables, and Constrained Optimization. Time permitting, the instructor may cover differential equations and

dynamic optimization. Classes are three days per week; problem sets are assigned but there is no exam and no grade for the class.

Most first-year economics Ph.D. students attend math camp. The economics department organizes events during this period to allow the students to get to know each other and to get to know the upper level economics students. If you have a weak math background, want a reason to get to Boston early to allow plenty of time to settle in, or don't want to miss out on the early bonding, the math camp is a great opportunity.

For information on last year's syllabus, please visit <http://web.mit.edu/14.00/www/>. In the Economics Department, please contact either the Graduate Administrator Katherine Swan (kswan@mit.edu) or the Undergraduate Administrator Gary King (gking@mit.edu) for further information on the exact scheduling of the Summer Math Camp and how to enroll.

5. How do I enroll in courses taught at the Sloan School of Management?

Sloan has a bidding system for all its courses. Although your registration will be handled by Sharon Cayley for your first semester, after that you have to enter the Sloan course bidding system for all of your Sloan courses. You will receive an email during your first semester with the schedule of all courses taught at the Sloan School, as well as detailed instructions for course bidding.

6. How do I register for courses /how do I cross-register at other universities?

Sharon Cayley will pre-register you for the core required courses in your department for your first semester. On registration day you can meet with Sharon during the PhD Orientation to change/add/drop any of these courses on your registration form. From your second semester onwards, you will need to pre-register online in advance for all your courses, (excluding Sloan courses – see above), through WebSIS. On registration day you should then collect your registration form from Sharon's office and sign it. The subjects that you have pre-registered for will come pre-printed on the registration form. Prior to handing in the form, you can put a line through any of the pre-registered subjects which you wish to drop. Completed and signed registration forms should then be dropped off at the Registrar's Office (Room 5-119) or the Student Services Center (Room 11-120). The Friday after registration day is the deadline for completed forms to be handed in. Any forms received after Friday will be subject to a \$40 late registration fee.

If you wish to add/drop courses later on in the semester, you will need to pick up an Add/Drop form in Sharon's office and, if necessary, obtain the signatures of the professors teaching the courses you wish to add. There are strict deadlines for adding and dropping courses; please check the academic calendar for the exact dates during the semester. Answers to FAQ on registration and cross-registration at other universities can be found on WebSIS, at <http://web.mit.edu/registrar/www/reg/index.html>.

7. I am an international student. How do I obtain a Social Security Number?

Social Security Number is a taxpayer identification. If you are paid in the US, you must have a SSN to file a US income tax return. A SSN is also needed in order to get some useful services,

including a cell phone contract and a driver's license.

To obtain a social security number you will need:

- Your passport with F-1 or J-1 visa
- I-94 card
- I-20 or DS-2019 form.
- A letter of support from the International Student Office stating:
 - That you have been offered part-time employment
 - The nature of employment
- A letter from the employer on the employer's letterhead that provides employment verification, namely:
 - Identity of student employee
 - Nature of job the student is, or will be, engaged in
 - Anticipated or actual employment start date
 - Number of hours the student is expected to work
 - Employer Identification Number, (EIN)
 - Employer contact information, including the telephone number and the name of the student's immediate supervisor
 - Original signature and signatory's title
 - Date

You should bring all of the needed documents to the Social Security Administration Office, which is open Monday-Friday 9 am-4 pm:

240 Elm Steet
Somerville, MA 02144
Boston
1-800-772-1213
<http://www.socialsecurity.gov>

Directions to the Social Security Administration Office: Take the red line to Davis Square, and follow the Holland St. exit. Upon exiting the T, turn right and walk up Holland St. past the Somerville Theatre. Holland st. turns into Elm St.; keeping walking straight through Davis Square. The social security office will be on your right, next to Dunkin' Donuts.

8. How are RA / TA positions assigned?

For RAs, the best thing to do is to talk to professors who are doing research you are interested in and inquire whether they have any RA openings. Each department has a different system for assigning TAs. Talk to an upperclass student from your department for details.

Accounting department: Each semester, a faculty member determines the demand for TA hours and the total hours available in accounting courses, then assigns responsibilities to best fill all needs.

9. What computing facility does MIT use?

Athena is MIT's UNIX-based campus-wide academic computing facility. To activate an Athena account, you just need to register for your MIT Kerberos identity (see below) - this process then automatically creates your Athena file space and otherwise activates your Athena account. (If you have already registered, i.e., you have established an MIT Kerberos identity but your Athena account still seems not to have been activated, please contact User Accounts at 617-253-1325 to have them activate your Athena account manually.)

To log into any Athena workstation on campus, you just need to use your Kerberos ID and password. Athena has over 600 workstations distributed around campus in both general-use and departmental "clusters". Each cluster consists of a certain number of workstations plus one or more printers, all gathered in one room. To enter 'cluster' facilities, you need to know the cluster lock combination. To find out this combination (it changes on October 1 each year), enter the following command at your athena% prompt after logging into any Athena workstation: `tellme combo`. Additionally, Athena has almost a dozen Quickstations located around campus. A Quickstation is a workstation which has all of the capabilities of an Athena workstation. However, Quickstations are only intended to be used for ten minutes; after ten minutes, the workstation strongly encourages you to log out. For additional information on how to use Athena, please go to: <http://web.mit.edu/ist/topics/athena/>. For online help on Athena, please visit the following site: <http://web.mit.edu/olh/>

10. How do I access the MIT network?

The first thing to do once you get your MIT ID number is to get a Kerberos account to access MIT's web systems. You should receive an email from the Sloan technology office with instructions on creating an account. In general you can go to <http://web.mit.edu/register> and use your MITID and your ApplyYourself PIN code to create your account.

In order to access restricted sites and personal information on MIT's websites, you need to install a personal certificate on your computer at: <http://web.mit.edu/ist/topics/certificates/> using your MIT ID and your Kerberos ID and password.

11. When do I get my laptop?

On Registration Day, you will receive your laptop during an orientation session with Sloan Technology Services. During this session, you will be given a tutorial (lasting approximately two hours) explaining how to set up your computer for your own personal use, connect to email and the internet, and so on. You will also be introduced to the Sloan Technology Services department and their support staff, who are located in the basement of E52. You can contact them if you require any further assistance during the semester.

12. Where should I live/what are the different graduate residences/how do I apply for on-campus housing?

MIT has on-campus accommodation for about one-third of its graduate student population. Single students can choose from six dormitory or apartment style buildings, and students attending with their spouses and families can live in apartments in one of the two family residences.

Because on-campus housing is limited, assignments are made through a lottery/ allocation pro-

cess. Incoming students should apply to the New Allocation. The goal each year is to house as many new graduate students on campus as possible, and though this means there are more spaces for new students, these assignments are limited to one year. (Fewer continuing students are assigned, but once assigned they may remain on campus until they graduate).

Applications to the Graduate Housing allocation lottery are online from the beginning of March until the third week of May. For further detailed information on the graduate housing residences and the application procedure, please go to: <http://web.mit.edu/housing/grad/index.html> and <http://web.mit.edu/housing/grad/ghg/> (for the full MIT Graduate Housing Guide).

Additionally, some quick facts about on-campus graduate housing at MIT can be found at <http://web.mit.edu/housing/grad/ghg/quick.html>. This site also contains several links to more specific information about the graduate residences and their rates, as well as answers to other frequently asked questions about graduate housing.

13. Which realtors should I go to for off-campus housing?

The MIT Off-Campus Housing Service helps students locate alternative housing in Boston and Cambridge. At <http://web.mit.edu/housing/och/index.html> you can find rental listings, contact details of reliable realtors, furniture resources, legal information and other related services. MIT also owns several apartment buildings in the area for rent to graduate students and affiliates. Although the majority of vacancies occur in roommate situations, many one, two or more bedroom units become available each year, see: <http://web.mit.edu/housing/och/mitowned.html> To speak with someone directly about off-campus housing in the greater Boston area, contact the Off-Campus Housing Service (E32-214) or call 253-1493, email: eleonore@mit.edu; general@mit.edu.

A real estate agency other students have used with success is Arthur Horiatis at Tory Row Realty, <http://www.toryrow.com>. A great place to find cheap used furniture is at <http://boston.craigslist.org>.

14. Which medical forms do I need to fill out?

By the time you come to campus, make sure you have filled out the required medical forms at <http://web.mit.edu/medical/g-requirements.html> . There are some immunizations which may need to be administered over a period of time, so take a look at the requirements ahead of time. If you need to, you can get the required physical examination and lab tests done at the MIT medical center, building E23 on the first floor.

15. How do I get medical insurance?

Graduate students have guaranteed comprehensive health insurance paid for by MIT. You can also purchase the same health coverage for your spouse / partner and dependents. Information on the student insurance plan is available at <http://web.mit.edu/medical/p-student.html>.

16. What dental plans and services are available for graduate students at MIT?

The MIT student health plan does not cover dental services, but there are several options available, detailed at <http://web.mit.edu/medical/services/s-dental.html>. In general, if you only

need your teeth cleaned, it is convenient just to make an appointment at the dental office at the MIT health center and pay as you go.

17. What is the Graduate Student Council (GSC)?

MIT's Graduate Student Council is an organization of graduate students that organizes events, provides funding, and advocates causes related to graduate student life. They organize a week-long orientation for new graduate students during the week before registration day, and you may want to attend some of those events. The GSC website has a lot of useful information regarding graduate student life at MIT, although some of it is of limited relevance to Sloan students: <http://web.mit.edu/gsc/www/>.

18. Do I need a car in Boston?

You don't need a car if you live near a train station or a frequently serviced bus stop. If you will be a Massachusetts resident and you bring a car to Boston, Massachusetts requires you to transfer your registration within 20 days. If you will not be a resident of Massachusetts, you can complete a Nonresident Student Vehicle Information Form instead. You can find all the forms at <http://www.dmv.org/>

To transfer an out-of-state registration to Massachusetts:

- a) Fill out an Affidavit in Support for Exemption from Sales or Use Tax for a Motor Vehicle Purchased Outside of Massachusetts (MVU-29). This form is available at any full service RMV branch office or on-line at <http://www.mass.gov/rmv/regs/reg4.htm>.
- b) Take the form to a licensed insurance agent and have the agent complete, stamp and sign an Application for Registration and Title (RMV-1).
- c) After verifying all information, sign the RMV-1 application. Along with the completed RMV-1 application, you must submit the following documents:
 - i. Your out-of-state title, and/or
 - ii. Your current out-of-state registration, and
 - iii. Completed Sales Tax Exemption form (MVU-29).
- d) Take the completed RMV-1 application and MVU-29 form and supporting documents to the nearest full service RMV branch office. Expect to pay a \$50 title fee plus a registration fee of about \$40.

19. How do I get a driver's license?

Massachusetts residents are required to have a valid Massachusetts ID or Drivers License. See <http://www.mass.gov/rmv/license/90os.htm> for forms, fees, etc.

20. What public transportation services are available for MIT students?

The Boston subway system, called the T, is a fast and convenient way to get around town. The nearest T stop to Sloan is the Kendall Square station, which is just up the street on Main street from the Sloan building. If you anticipate using the subway often, it is worthwhile to sign up for MIT's subsidized T pass program, which allows students to purchase monthly subway transportation passes at half price. You can sign up for the program online at <https://commuting.mit.edu/parking/index.html>.

For information about shuttles which run on and off-campus, (as well as other transportation options), please go to:

<http://web.mit.edu/afs/athena/org/p/parking/index.html> .

21. How do I get an ID card?

If you are an international student, you must first go to the International Students Office in Building 1 and complete the registration and orientation before obtaining your ID. The orientations are usually scheduled around Orientation Day.

If you are not an international student, and you are admitted for the fall and have no holds against your registration, you can go to the ID card office on E32-117 after August 15 with a photo ID and get an MIT ID card. If you are to start your studies at some other time during the year, contact the ID card office at 617-253-3475 or mitcard@mit.edu to find out when you can get your ID. You will need your ID card to access many of MIT's facilities, including the gym, dormitories, and some buildings, so it is advisable to get one as soon as you can.

At the card office, you can also get an ID card for your spouse or partner by presenting official documentation with both of your names on it, such as an apartment lease, credit card, or marriage license. This card would allow your spouse / partner to access MIT facilities such as the gym, library, etc. after completing appropriate membership applications.

22. Can I make purchases on campus using my ID card?

TechCASH is a debit system linked to your MITID card which enables you to deposit money online so you can pay for food, books, laundry, etc. on campus using your ID card. This is especially handy if you plan to purchase many of your meals on campus. You can set up your TechCASH account online at <http://mit.edu/mitcard/techcash/openaccount.html>.

23. How do I get an MIT library card?

Your MIT ID card is used to check out materials.

24. Where do I buy textbooks?

The best bookstores to buy textbooks are the MIT Coop in Kendall Square and Quantum Books in Cambridge Center. Textbooks are organized by course number and are easy to find. However, the stores get very crowded at the beginning of the semester, so we recommend that you purchase textbooks early. The Harvard Coop also has a good selection of used textbooks. While these bookstores offer the convenience of getting your books right away, it is usually possible to find textbooks much cheaper online (check www.froogle.com or www.addall.com for prices). Furthermore, it is always possible to buy back books from other students (for example, ads to sell textbooks are posted on bulletin boards around campus at the beginning and end of the semester). Another useful source to check out is the APO Book exchange, (617-253-3788, web.mit.edu/apo/www/bookexchange.html.)

25. How can I get a discount for a cellphone?

There is a discount for MIT graduate students who have an RA/TA appointment. For more infor-

mation, please check <http://web.mit.edu/ist/services/telecommunications/cellphones.html>.

Official Policy for RA / TAs

The following policies are taken directly from the 2006-2007 doctoral student employment guidelines.

For entering students, the Sloan fellowship offers 100% fellowship for years 1 and 2 and 50% for years 3 and 4.

Teaching Assistants

The academic area administrators (see Important People to Know) are available to answer any questions regarding TA availability and work requirements.

Under the points program, a full-time (100%) TA must earn 100 points. The points will be awarded based on the work that the TA performs and the number of students that they support. While duties may vary, a 100% TA may include the following duties:

- Develop course materials
- Attend class sessions
- Grade assignments and examinations
- Homework / exams / solutions preparation
- Keep track of student participation and performance
- Office hours
- Provide tutorial support
- Provide technical support for technological courses
- Design / maintain of web sites
- Act as liaison between the instructor and the students
- Teach recitations

Research Assistants

There are a limited number of funded research assistantship opportunities. Please speak with faculty members about RA availability and work requirements. Faculty research interests are listed on the Sloan website, <http://mitsloan.mit.edu/faculty>, and are also in the Sloan Expertise Book available in the PhD Program Office (E60-226)

The primary duty of an RA is his / her contribution to a program of departmental or interdepartmental research. Most students welcome the opportunity a research assistantship gives them to participate as junior colleagues of the faculty in an ongoing research project, and this experience frequently influences their choice of thesis topic. RA appointments, like TA appointments, vary in the level of effort, up to a maximum of 100 points. The level of effort is established by the faculty member.

Student Requirements

Only full-time MIT registered graduate students may apply for RA/TA appointments. The Doctoral Program reviews all appointments to ensure that aid is granted only to students with satisfactory academic performance. Satisfactory academic performance is reviewed each term. A student who wishes to hold a TA or RA must have a current cumulative GPA of 4.0 or higher, as seen on WebSIS. Students are not allowed to TA a course at the same time they are enrolled in that course. Special note to dual degree candidates: candidates for a dual degree may hold a TA/RA appointment only during the terms in which they are registered as a full time MIT student. For summer RAships, students who want their tuition covered for terms when they are not taking any courses should enroll in 15.961 or 15.THG (after passing generals).

Graduate Student Staff - Terms of Appointment

The duration of most academic year RAs or TAs is 4.5 months per semester: September 1 - January 15 for the fall term and January 16 - May 31 for the spring term. Summer appointments may vary from one to three months, from June 1 through August 31.

The tuition portion of an appointment is considered Financial Aid. For this reason, tuition and medical insurance dollars may not be converted into stipend. If a student has received tuition or medical insurance from other sources (fellowship, external funding, etc), the tuition award will be excluded from the TA/RA award. The stipend portion is considered compensation; therefore, Federal and Massachusetts income taxes will be withheld.

First-time Research and Teaching Assistants must file the necessary Federal and Massachusetts tax withholding forms. These forms may be picked up on the wall across from E40-171 and returned to Tammy Santora's office in E40-171 or attached to the submitted appointment form. A copy of a passport or driver's license and social security card is also required (as stated on the back of the I-9 form). An appointment cannot be processed until these forms are reviewed.

A full time (100%) appointment involves a commitment from the student to earn 100 points during the course of a semester. There are registration limitations associated with TA/RA appointments. The registration limits vary depending upon the level of effort of the appointment. In cases in which the student's thesis and project research are closely related, registration limits may be increased by thesis units with the approval of the Program Chairman on the thesis advisor's recommendation. A detailed description of a full-time position follows.

The Application Process

The academic area administrators (see Important People to Know) can provide the PhD application forms. These application forms are also available on the wall across from E40-171. Tammy Santora (E40-171, x3-0372) can answer questions regarding payments, tax forms, employment eligibility, and timing. Please fill out the top half of the form, sign the application, obtain the signature from the faculty supervisor, and submit the materials to the area administrator. When all signatures have been received, the form will be forwarded to Tammy Santora in E40-171.

Payment Information for RAs, TAs, and Fellowships

Stipend checks are delivered at the end of each month to Student Services located in 11-120. For

direct deposit, please complete a bank deposit authorization card at the Payroll Office (NE49-3131) or at Claudia Forero-Sloan's office (E40-172) by the 15th of any month. For convenience, the form is also attached with the tax forms. In order to avoid a finance charge on the tuition portion of the award, a student must either submit the necessary paperwork or have an interview with Tammy Santora to discuss fundign sources before the beginning of the semester. The School is not responsible for finance charges incurred.

In order to insure that students receive a stipend check at the end of the month, please complete the application and submit it to Tammy Santora for processing no later than the first week of the month. Late forms will be processed on a first-come, first-serve basis.

Maximum Support Level

Please note that the maximum level of effort from all work and fellowship sources that a student may receive during any given semester is 100%. Students who reach 100% level of effort cannot engage in additional employment for compensation from MIT-administered sources of payment. The above restrictions include payment on hourly payrolls as well as academic, administrative, or research staff appointments, as stated in the MIT Graduate Student Manual. Any questions should be discussed with Tammy Santora E40-171 before work is performed.

The maximum tuition support from all sources that a Sloan PhD student may receive for the academic year is \$32,100. If a student already has tuition paid from another source (internal or external to MIT), the appointee will only receive the stipend portion of the award. The tuition portion of any TA or RA award cannot be distributed as stpidend.

Technical Instructors for the Summer Term

Technical Instructor is the title for non-registered graduate students doing TA or RA work during the summer. The 2005 summer compensation for PhD students was \$3,300 per month for a full time appointment of 40 hours / week. Part time appointments will be prorated. To apply, please submit the "Summer TI form", available from Tammy Santora. Students progressing toward a degree may not hold a TI appointment. Pleas submit an application for a Registered Research Assistant. The stpidend for a full-time registered RA is \$2,049 per month. Part-time appointments will be prorated accordingly.

RA / TA Award Schedule

% Effort	Reg. Limit	Points	Stipend/ Month	Stipend/ Term	Tuition / Term	Tuition / Month
100	36 units	100	\$2,121.00	\$9,544.50	\$16,700.00	\$3,711.11
83	41 units	83	\$1,767.50	\$7,953.75	\$13,916.61	\$3,092.58
67	46 units	67	\$1,414.00	\$6,363.00	\$11,133.22	\$2,474.05
50	51 units	50	\$1,060.50	\$4,772.25	\$ 8,350.00	\$1,855.56
33	56 units	33	\$ 707.00	\$3,181.50	\$ 5,566.11	\$1,236.91
17	61 units	17	\$ 353.50	\$1,590.75	\$ 2,783.32	\$ 618.52

Boston Area Seminars

An important part of your PhD experience involves making connections with the academic community at MIT and abroad. Attending local seminars is a great way to get exposure to new ideas and new people. Typically, a faculty member or PhD student presents his/her research at the seminar, and a discussion with the audience follows. Often the works presented are not yet published, or even finished. These seminars provide a great way for researchers to receive feedback on their work from colleagues. Below is a schedule of local seminars that held at MIT, Harvard, Boston College, and the National Bureau of Economics Research (NBER). This is not an exhaustive list. You may find other seminars in Boston that you will want to check out.

MIT

Accounting Seminar

Wednesday 10:30-noon

Organized by the accounting faculty. Email Devis Myteveli, devis@mit.edu, to be added to the distribution list.

Batterymarch Finance Economics Seminar

E52-175

Wednesdays, 4:00pm – 5:30pm

This is the weekly financial economics seminar organized by the financial economics faculty.

Economics, Finance, And Accounting (Ef&a) Lunch

<http://web.mit.edu/~finlunch/>

Wednesday noon – 1:00 pm

E52-460

Organized by students in the financial economics department, these informal lunches are an opportunity for students and young faculty to share their work in progress. The organizers rotate each semester, so check the website and email whoever is in charge to be added to the mailing list or to request a presentation slot.

Economics Department Seminars

<http://econ-www.mit.edu/events/>

The MIT economics department has many excellent seminars every week. Check this online calendar for more information.

Organization Studies Seminar

<http://web.mit.edu/sloan/osg-seminar>

Friday 1:00-2:30 pm

Forrester Room, 5th Floor, E52

Organized by Jason Jay and Joelle Evans, email jjay@mit.edu, to be added to distribution list.

Economic Sociology Seminar

<http://web.mit.edu/ewzucker/www/econsoc-sem.htm>

Wednesday 3:30-5:00pm

MIT Location: Forrester Room, 5th Floor, E52

Harvard Location: William James Hall (Location alternates between Harvard and MIT.)

Organized by Ezra Zuckerman. Email Ezra Zuckerman, ewzucker@mit.edu, to be added to the distribution list.

Economics Department Seminars

<http://econ-www.mit.edu/events/>

The MIT economics department has many excellent seminars every week. Check this online calendar for more information.

Iwer Seminar

<http://mitsloan.mit.edu/iwer>

Tuesday 1:00-2:30 pm

Forrester Room, 5th Floor, E52

Typically preceded by a brown bag lunch at 12:00 in the Forrester room. Email Jacalyn Curreri, jcurreri@mit.edu, to be added to the distribution list.

Organizational Economics Seminar

(Joint Seminar with HBS and Harvard Economics Department)

<http://www.people.hbs.edu/gbaker/oes/>

Thursday 2:30-4:00 pm

MIT Location: Freeman Room, 2nd Floor, E52

Harvard Location: Sever 213

Organized by Bob Gibbons and George Baker.

Email Jamila Tolbert, jtolbert@mit.edu, to get on the distribution list.

Organizational Lunch Series

(Predominantly PhD student works-in-progress)

Thursday noon

Forrester Room, 5th Floor, E52

Organized by Bob Gibbons and Eric Van den Steen. Email Jamila Tolbert, jtolbert@mit.edu, to get on the distribution list.

Harvard Business School

Arg Workshop

(Social Psychology, Organizational Behavior Seminar)

Every other Wednesday 4:30-6:00 pm

Harvard Business School, Cotting Conference Room

Email Teresa Amabile, tamabile@hbs.edu to be added to the distribution list.

Organizational Behavior Seminar

<http://www.hbs.edu/units/ob/FallSeminarSeries.html>

Friday 3:30-5:00 pm

Harvard Business School, Cotting Conference Room

Tom Seminar

(Technology and Operations Management)

<http://www.hbs.edu/units/tom/research-seminars.html>

Thursday 12:50-2:20 pm

Harvard Business School, Cumnock 230

Organized by Alan MacCormack. Email Alan MacCormack, amaccormack@hbs.edu, to be added to distribution list.

Wip/wom Seminar

(Work-In-Progress/Work, Organizations, and Markets)

http://www.hbs.edu/doctoral/research/wip_wom_schedule.html

Tuesday noon - 2:00 pm

Harvard Business School, Cumnock 230

Organized by Marya Hill-Popper and Jerry Kim. Check website for schedule.

Harvard Kennedy School

Seminar Series On Information, Institutions, And Governance

<http://www.ksg.harvard.edu/digitalcenter/events.htm>

Monday noon - 1:30 pm

Harvard, Bell Hall

Cambridge Colloquium On Complexity And Social Networks

<http://www.ksg.harvard.edu/complexity/>

Varies noon - 1:30 pm

Harvard, Bell Hall

Chaired by David Lazer. Email Ines Mergel, ines_mergel@harvard.edu, to be added to the distribution list.

Harvard Psychology

Social Psychology Research Workshop

<http://www.socialpsych.wjh.harvard.edu/>

Tuesday noon

Harvard, William James Hall 1305

Boston University

Strategy And Policy Speaker Series

<http://people.bu.edu/furman/html/seminars/>

Wednesday 11:00 am - 12:30 pm

Boston University, SMG 658a

Seminar coordinated by Isin Guler. Contact Isin Guler, guler@bu.edu, for more information.

NBER

Productivity Lunch

<http://www.nber.org/>

Tuesday noon

NBER, 1050 Massachusetts Ave, Cambridge

Email Jeff Furman, furman@bu.edu, to be added to distribution list.

NBER also has three conferences a year for each major area of economics study. Check out <http://www.nber.org/confer/> for a full schedule. Students are invited to attend at no charge. Finance and economics faculty members are usually keyed in to the dates and topics.

Tips on Starting Research

Here are some tips on starting on research as a PhD student from Amy Finkelstein's IAP talk. Catch it if you can!

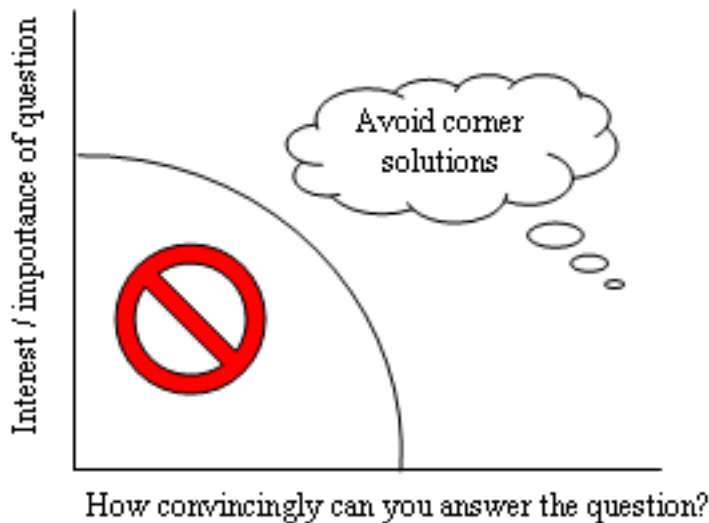
The bottom line

1. It is hard to do good research
- *for everyone*
2. Research is not a solo process
- *Talk about your ideas with people early and often*
3. Most “projects” fail
- *The key is to triage efficiently*

Coming Up with Ideas

- All (good) research starts with a question that is interesting
 - Can you explain to others why it's interesting and exciting?
 - Your peers and professors
 - Non economists
 - Your family
 - Non-economist friends (if any)
 - Are you interested in this question?
 - If you are not interested and excited in your project, how can you possibly expect anyone else to be?
 - And you will certainly not enjoying working on it for many years!
- All topics need good motivations
 - Papers should be motivated by broad, interesting, and/ or important issues, although the specific problem you end of working on may be narrow and technical
 - This will keep you (and others) motivated and interested
 - Write down the motivation so you remember it
 - Look back at it from time to time
 - Keep adding to it
 - Example 1: Development
 - Broad question: How to reduce corruption in developing countries?
 - Specific project: How do we get good measures of corruption?
 - Example 2: Public Finance
 - Broad question: should the government stay out of insurance markets?
 - Narrow, technical paper: how do we design empirical tests of adverse selection?
- There's a problem when...
 - Your answer to “what are you working on” starts with:
 - “My paper is an extension of Famous Economist (2003b)”
 - “I found a really cool source of identification / natural experiment”
 - “My project is really hard because it involved ... “

- The use of a really cool new econometric technique
- Really messy data
- Really complicated programming
- A lot of time
- Always be on the frontier



- How to come up with ideas?
 - Chicago adage
 - “vote early, vote often”
 - Think about ideas early, often and always
 - Write all your ideas down!
 - Especially why you care
 - Sources of ideas:
 - Classes – what are the important unanswered questions?
 - Seminars – what does the seminar make me think about?
 - Especially why you care
 - In general do not go to the literature for ideas
 - Broad survey articles can stimulate ideas
 - Handbook chapters
 - Read the newspaper with an eye towards economic questions
 - Read non-fiction
 - Talk to people – economists and non economists
 - Keep at it
 - The use of a really cool new econometric technique
 - Really messy data

Triage your ideas

- Most projects fail
 - Being able to figure out the lethal problem quickly is the key to having time to work on

- your (ultimately successful) projects
 - The first line of defense – talk to people
 - Especially your peers
 - Do not self-censor your thoughts
 - Do not wait long before talking to them
 - Handbook chapters
 - Don't wait to talk to faculty either
- Important triage steps
 - Being able to figure out the lethal problem quickly is the key to having time to work on
 - Do I have the facts right?
 - If the effect is there would it be detectable?
 - Would it be interesting if I found nothing?
 - Do not immediately give up on an idea because
 - You found a paper on econ-lit that seems to be on a similar topic
 - The first time you tried to explain it to someone they weren't that interested
 - It's not obvious how to go about answering the question
 - You don't think there's any data to answer it
- Data triage
 - What are the ideal data I would need for this project?
 - What kinds of data exist?
 - Is there anything I can do quickly to get a rough sense of whether the effect would be there?
 - What are the ideal data I would need for this project?
 - Step #1 with the data: PLOT YOUR DATA
- What if the data just don't exist?
 - Consider collecting your own data
- Where to look for your own data?
 - Archival work
 - Your friends and families may unwittingly be sitting on great data
Think creatively about what they might have access to
 - Use internet resources creatively
 - Design a survey
 - Use internet resources creatively
 - Don't be afraid to make cold calls to organizations that might have data
 - Use internet resources creatively

Program Requirements

The following are up-to-date overviews of each of the PhD programs in each of the departments at Sloan. Most of this information comes directly from the “official” requirements as decreed by the faculty. In addition, we have included suggestions from students on the subjects you may want to study before starting at Sloan as well as student comments on unofficial requirements and other department-specific details. In reality, students may not need to fulfill all of the official requirements or may need to fulfill additional requirements, so please treat these as guidelines only and consult professors and other students in your department to decide on a program that suits you and satisfies the faculty.

Management Science

The requirements for the programs within management science - information technologies, marketing, operations management, and system dynamics - are the same except for the major courses.

To earn a PhD at MIT, a student must complete a program of advanced study, including general examinations, and orally defend a thesis on original research.

Required courses

Required courses fall in four categories: breadth, foundation, minor field, and major field with the number of courses being 3/3/3/2. The requirements related to the thesis consist of several milestones. The first step for all students is to pass a general exam in the major field, typically after two years in the program. Some groups also require students to write and get feedback on a “second year paper”, consisting of independent research of close to thesis quality. The thesis proposal, which may be orally presented, is then the last hurdle before the thesis itself is written, presented, and evaluated.

General requirements

1) Progress Expectations by years (Year 1) Satisfy course requirements, (Year 2) Complete course requirements, write and present second year paper (if required), begin research project(s), prepare for general exams, (Year 3) complete general exams and research papers, investigate thesis topics, (Year 4) develop and complete thesis, conduct job search.

2) Definition of thesis committee “chaired by a faculty member within the Sloan School holding one of the following titles: Professor, Associate Professor, Assistant Professor, Institute Professor, Professor Emeritus, or Senior Research Scientist; those holding other titles (i.e., Senior Lecturer, etc.) must be approved by the Dean of the Sloan School

3) Dissertation/Thesis; may take the form of familiar book-style (chapters) or a number of essays (often 3). In the latter case, it is expected that at least two of the three essays are solely authored

by the student.

4) Academic standards, Committee on Graduate School Performance, Non-resident status, Inter-departmental program, etc. please go to <http://web.mit.edu/gso/gpp/index.html>

Breadth

The requirement may be satisfied with any of the following:

- Behavioral Science

15.341 or .342 or courses taken elsewhere (submit syllabus to Prof. John Carroll if taking second option)

- Economics

Either some courses taken at MIT or prior to arriving (in the latter case, submit syllabus to Prof. Wernerfelt)

- Management Science

Either 15.057, 15.081J, 15.093, 15.825, 15.874, or courses taken elsewhere (submit syllabus to Prof. James Orlin).

Foundation

Each student should select three courses from the menu approved by the Management Science PhD Committee. A grade of A is normally required.

Statistics

14.381 Statistical Methods in Economics

14.382 Econometrics I

Or

15.076 Statistical Theory and Methods

15.077 Modern Regression and Multivariate Analysis

Optimization

15.081J Introduction to Math Programming

15.082 Network Optimization

15.083J Combinatorial Optimizations

15.084J Nonlinear Programming

Economics

14.121 & 14.122

(1/2 semester courses on Microeconomics theory and Game theory.)

14.451 & 14.452

(Both are 1/2 semester courses on Macroeconomics.)

Applied Psychology

15.341 Individuals, Groups and Organizations

15.342 Organizations and Environments

Psychology 2500 Advanced Social Psychology

Psychology 2630 Social Behavior in Organizations : Seminar

Minor Courses

Minor courses have to be three Ph.D. level courses in a single discipline. Examples are economic theory, econometrics, computer science, behavioral science, and statistics.

Major Courses

Information Technology

15.575 Research Seminar in Information Technology and Organizations: Economic Perspectives

15.576 Research Seminar in Information Technology and Organizations: Social Perspectives

Marketing

15.838 Workshop in Marketing

15.839 Workshop in Marketing

Operations Management

15.799-Workshop in Operations Management

15.764-Theory of Operations Management (within first two years)

Computing Methodology

6.823 Computer System Architecture

6.836 Embodied Intelligence

Stochastic Processes

6.262 Discrete Stochastic Processes

Dynamical Systems and Control

2.151 Advanced System Dynamics and Control

6.231 Dynamic Programming and Stochastic Control

6.241 Dynamic Systems

Political Science & Philosophy

24.810 Topics in the Philosophy of Science

Other courses tailored to needs of individual students after consultation with faculty.

Many of the courses taken by Operations Management students are offered through the electrical engineering department, so you may find it useful to consult <http://ocw.mit.edu/OcwWeb/Electrical-Engineering-and-Computer-Science/index.htm> for more details on the courses.

System Dynamics

15.874 System Dynamics for Business Policy

15.875 Applications of System Dynamics

15.879 Seminar/Workshop in System Dynamics

Other courses tailored to needs of individual students after consultation with faculty, including at least one course in control theory, nonlinear dynamics, or other related course.

Behavioral & Policy Sciences

The requirements for the programs within behavioral & policy sciences - the institute for work and employment research, technological innovation and entrepreneurship, and the organization studies group - are the same except for the major courses.

Required courses

Required courses fall in two categories: foundation and major field.

In addition, an advanced undergraduate or introductory graduate economics course is required.

Foundation Courses

15.341

15.342

15.347

Major Courses

Institute for Work and Employment Research

15.676

15.677

14.661 and 14.662

Harvard Courses may be substituted.

Technological Innovation & Entrepreneurship

Students are responsible for the content of all courses taught in the field but need not take them all

Organizational Studies Group

15.345-Doctoral Seminar in Behavioral & Policy Sciences

15.289-Seminar on Academic Communication
Exposure to economics and statistics (prior coursework or Harvard classes)

Strategy

Two courses in theories and methods beyond the BPS foundation requirements
Five disciplinary courses in economics, political science, or sociology, chosen in consultation with advisor.

International Management

15.220-International Management
15.249-Special Seminar in International Management or the equivalent reading course with IM faculty
Reinforcement of a discipline base (economics, sociology, Psychology, business history, or political science)

Research paper

A second year paper is required.

Other Requirements

The student should choose a minor in economics, sociology, psychology, business history, or political science.

Financial Economics

Preparation before the start of school

It's good to have a solid background in math, microeconomic theory, and the fundamental theories of finance. The most important areas of math are linear algebra, basic differentiation and integration, Taylor series expansion, and basic statistics and probability theory. If you need to brush up on any of these subjects, it's a good idea to look over the required textbooks for the first semester classes on finance, micro-economics, and finance.

Recommended and required courses

Only the four financial economics courses (15.416, 15.440, 15.441, and 15.442) are strictly required and necessary to prepare for the general examinations. Microeconomics and econometrics are highly recommended, although students with advanced backgrounds may find it appropriate to opt out of them.

First Year – Fall Semester

14.121 – Microeconomics 1
14.122 – Microeconomics 2
14.381 – Statistical Methods in Economics
15.416 – Intro. to Financial Econ.(required)

First Year – Spring Semester

14.123 – Microeconomics 3
14.124 – Microeconomics 4
14.382 – Econometrics I
15.440 – Dynamic asset pricing (required)

15.441- Corporate Finance (required)

Second Year – Fall Semester

14.383 – Econometrics II

and one of:

14.384 – Time-Series Analysis

14.385 – Nonlinear Econometric Analysis

Second Year – Spring Semester

15.442 – Empirical finance (required)

Elective courses

There are two informal “tracks” in Financial Economics: Corporate Finance and Asset Pricing. The typical student’s interests will tend to fall naturally into one of the tracks after the first year, but you don’t have to select one track or another. Some recommended courses for the two tracks are the following.

Asset pricing

14.384 – Time Series Analysis

14.453 – Macroeconomic Theory III

14.454 – Macroeconomic Theory IV

14.461 – Adv. Macroeconomics I

14.462 – Adv. Macroeconomics II

15.437 – Options and Futures

18.125 – Measure and Integration

18.175 – Theory of Probability

18.177 – Stochastic Processes

Corporate finance

14.129 – Contract Theory

14.281 – Contract Economics

14.282 – Organizational Economics

14.385 – Nonlinear Econometric Analysis

14.661 – Labor economics I

Other Requirements

There are finance seminars every Wednesday on the first floor of Sloan, and you should make an effort to attend all of these seminars. There are also weekly finance lunches that are less formal and where students are welcome to contribute to the discussion.

General Examinations

The general examination is taken at the end of the second year. Currently, generals consist of a 2-3 hour oral exam on the four advanced finance courses administered by four professors in the finance department, with about 30-45 minutes for each course.

Papers

In the third year, students are expected to select a dissertation topic and an advisor. The dissertation is typically a series of two or three research papers, preferably three. Students typically complete their dissertations by the end of their fourth year.

Meeting the Faculty

There are student faculty lunches about twice a semester which are designed to help students mingle with the finance faculty on a more casual basis outside of the classroom. However, it is good to start getting to know the faculty on your own, because they will be a great resource to you throughout your time as a PhD student. As you start to read papers and familiarize yourself with the finance literature, pay special attention to the contributions of the Sloan faculty. Faculty

members would be much more interested in talking to you and helping you if you know about their work and can talk intelligently about it.

TA / RA

Students receive a full-fellowship for the first year and do not have to TA or RA. During all remaining terms, students owe TA or RA hours. Requirements for subsequent years are outlined in the offer letter. Currently, the requirement is 15 hours/week during the second year and 20 hours/week during the third and fourth years, although this is subject to change. Sloan offers no fellowship to students for their fifth year; 30 hours/week is required to pay tuition and receive the same stipend as partially supported years.

Paid RA positions during the school year are difficult to come by, due to the MIT accounting method for RAs. Students sometimes help faculty with research on their own time for the experience and the potential for co-authorships. Paid RA positions are much easier to find during the summer months because MIT gives a discount to faculty members for the summer

Miscellaneous Information

- To get your office, contact Cathy Ly, cathyly@mit.edu, E52-459
- To connect your computer up to the department printer, first download the driver for the HP Laserjet 2300n from <http://hp.com/>. Then add the printer using the windows wizard using IP address 18.170.4.67.
- We have a \$500 research budget each year which can be used to reimburse research-related expenses including textbooks, travel to conferences, etc. Collect your receipts and give them to Cathy in April.
- When you arrive, you should see Megan Gately in the Finance Department (mgately@mit.edu) to get your personal code to the finance copy machine to make copies.
- The finance suite is locked in the early morning and in the evenings and weekends. Even if you use your key to get in the door, you must enter the code to prevent the alarm from sounding. The code must also be entered when exiting. The code to the finance suite can be obtained from Megan Gately .
- If you accidentally trip the alarm, immediately enter the alarm code and notify Campus Police at 3-1212 or else they will come by to investigate.

Accounting

Program Preparation

A solid background in both microeconomic theory and math is required. The two most important areas of math are linear algebra and differentiation/integration. Students without a strong micro background may wish to study an undergraduate intermediate micro text. The texts used for 14.121, which would also provide a good study guide, are Kreps's A course in Microeconomic Theory, Varian's Microeconomic Analysis, and Mas-Colell, Whinston, and Green's Microeconomic Theory. To brush up on math skills, the first dozen chapters of Simon and Blume's Mathematics for Economists are good.

Required Courses

4 quarters of Ph.D. level microeconomics: Price Theory, Game Theory, General Equilibrium, and Contract Theory

Econometrics I and II (1 ½ semesters)

2 semesters of Doctoral Seminar in Accounting

1 semester of Managerial Accounting Seminar (required if offered during second year)

2 finance courses (choose from Asset Pricing Theory, Empirical Corporate, Empirical Asset Pricing, or Continuous Time Theory)

Additional Courses

Statistics (preparation class for Econometrics)

Math for Economists (1st half semester is math needed for micro micro, 2nd half semester is for macro)

Additional finance courses (most students take all finance courses except Continuous Time)

Harvard finance courses (common course taken include Empirical Corporate, Empirical Behavioral, Continuous Time Theory, and Corporate Theory)

Additional econometric courses (Time Series or Non-linear, each ½ semester)

Additional economics courses (i.e. seminars in Public Finance, Labor Economics, etc.)

Standard First and Second Year Course Schedules

First year

Fall		Spring	
14.121-2	Microeconomics	14.123-4	Microeconomics
14.381	Statistics	14.382	Econometrics
15.416J	Asset Pricing Theory	15.441J	Empirical Corporate Finance

Second year

Fall		Spring	
15.539	Doctoral Seminar in Accounting	15.539	Doctoral Seminar in Accounting
14.383	Econometrics (1/2 semester)	Harvard	Managerial Accounting Seminar
15.442J	Empirical Asset Pricing		

Other Requirements

A summer paper is due on the first day of second year classes. This paper does not require data analysis-it is more like a research proposal. A hypothesis is developed and linked with relevant economic theory and literature, data collection tasks are outlined, hypothesis tests are designed, and implications of potential outcomes are discussed. This paper is read by a three-member summer paper committee, who offer feedback and suggestions. Data analysis is completed during the second year. The paper is presented to the entire department in May of the second year of classes.

There are not set rules regarding when a thesis proposal is due. It is expected that a topic will be selected by the middle of the fourth year. Students generally go to the market with more than one completed paper, one of which may be co-authored with another student or with a faculty

member.

Students receive a full-fellowship for the first year and so do not have to TA or RA for their stipend. During all remaining terms, students owe TA or RA hours. Currently, the requirement is 15 hours/week during the second year and 20 hours/week during the third and fourth years, though this is subject to change. Requirements are outlined in the offer letter. Sloan offers no fellowship to students for their fifth year; 30 hours/week is required to pay tuition and receive the same stipend as partially supported years.

A faculty member in the accounting department assigns students to classes to TA based on number of hours needed, seniority, schedule, etc. Paid RA positions during the school year are difficult to come by, due to the MIT accounting method for RAs. Students sometimes help faculty with research on their own time for the experience and the potential for co-authorships. Paid RA positions are much easier to find during the summer months because MIT gives a discount to faculty members for the summer.

General Exams

General exams are taken in late summer after the second year of classes. General exams are a full-day written exam. The evening that the written exam is turned in, a referee report is assigned, due a day and a half later. Finally, a few days after the referee report is turned in, an oral exam is given, as needed, to clarify any answers given. Results are discussed immediately following this oral exam.

Unspoken Expectations

Students are expected to be on campus during summer breaks and during IAP (January, when no classes are held). Professors expect you to take this as serious as any job. Pretend you have three weeks of vacation. Don't be gone for more than a week at a time.

Be seen around the department. The faculty eats lunch together almost every day and welcome students to eat with them. Try to eat with them a few times each semester.

Attend every accounting seminar (held weekly) unless you have a class conflict.

Course Descriptions

Here, we have compiled a list of all the courses which are required for Sloan PhD students in some department. Since the course descriptions online are rather brief, we have tried to gather here the basic course information which is not likely to change much from year to year. In addition, some of the course descriptions include tips and advice from students who have taken the courses in the past.

For up-to-date information on which professors teach these courses each semester as well as course schedules, please go to: <http://web.mit.edu/education/>. Then go to the 'Online subject listings and schedule' page.

14.121: Microeconomic Principles 1

Structure:

Fall

Half-semester course

Weekly lectures: Monday and Wednesday 1-2.30 p.m

Weekly recitation: Friday 1-2.30 p.m

90 minute final examination

Total credit: 6 units

Pre-requisites:

The course will be taught assuming that students have taken an intermediate microeconomics course at the undergraduate level. Further, students should have a working knowledge of multivariate calculus and linear algebra, as well as some exposure to real analysis. Students whose backgrounds are weak in some areas should plan to devote extra time, particularly in the first two weeks, to review the mathematical prerequisites.

Syllabus:

Theories of production and individual choice (under certainty and uncertainty); markets and competition; tools of comparative statics and their application to price theory.

Required Texts:

Primary text:

MasColler, A., M. Whinston, and J. Green, *Microeconomic Theory* (New York: Oxford University Press, 1995).

Supplementary texts:

Varian, H., *Microeconomic Analysis* (3rd edition) (New York: Norton, 1992).

Kreps, D., *A Course in Microeconomic Theory*, (Princeton: Princeton University Press, 1990).

For the supplementary text, students may choose between Kreps and Varian; Kreps is more intuitive while Varian provides a more concise treatment of the course.

Additional information:

This course is designed to provide an introduction to microeconomic theory for students planning to pursue a PhD in economics. There will be approximately six problem sets, which will be graded on a “check+, check, check-, and no credit” scale. Problem sets do not count towards the final grade, except for in the case where a student is ‘at the margin’ between two grades.

Student Comments:

Before the exam, the TA typically hands out copies of previous years’ exams. Be sure to get a copy, as these will be very helpful in studying for the exam.

14.122: Microeconomic Principles II

Structure:

Fall

Half-semester course

Weekly lectures: Monday and Wednesday 1-2.30 p.m

Weekly recitation: Friday 1-2.30 p.m

3 hour final exam (in class)

Total credit: 6 units

Pre-requisites: The course is open to all students who have taken and passed 14.121.

Syllabus:

Introduction to non-cooperative game theory; static and dynamic games of complete information, static Bayesian games, dynamic games of incomplete information including signalling models, perfect Bayesian equilibrium.

Required Texts:

Fudenberg, D., J.Tirole, Game Theory (The MIT Press, 1991)

Gibbons, R., Game Theory for Applied Economists (Princeton University Press; Reprint edition , 1992).

The recommended primary text for the course is Drew Fudenberg and Jean Tirole’s text, Game Theory. This text covers all the material in the course and much more, but has less in the way of intuition and examples. Therefore, students may alternatively wish to use Robert Gibbons’ Game Theory for Applied Economists as their primary reference.

Additional information:

This course is intended for students who intend to develop a solid background in game theory in order to pursue research in the applied fields of economics and related disciplines, and for students wishing to specialize in economic theory. The course is graded on the basis of five problem sets and a three hour final exam. The problem sets count for one-fourth of the overall grade.

Student Comments:

Before the exam, the TA typically hands out copies of previous years’ exams. Be sure to get a

copy, as these will be very helpful in studying for the exam.

14.123: Microeconomic Principles III

Structure:

Spring

Half-semester course

Weekly lectures: Tuesday and Thursday 1-2.30 p.m

Weekly recitation: Friday 1-2.30 p.m

2 hour final examination (in class)

Total credit: 6 units

Pre-requisites: 14.121 and 14.122

Syllabus:

Theory of general equilibrium and its applications and extensions, existence and optimality of equilibrium, capital theory, incomplete markets, Arrow's impossibility theorem, externalities and public goods, intertemporal competitive equilibrium and insurance.

Primary text:

MasCollé, A., M. Whinston, and J. Green, *Microeconomic Theory* (New York: Oxford University Press, 1995).

Supplementary texts:

Varian, H., *Microeconomic Analysis* (3rd edition) (New York: Norton, 1992).

Kreps, D., *A Course in Microeconomic Theory*, (Princeton: Princeton University Press, 1990).

Student Comments:

Before the exam, the TA typically hands out copies of previous years' exams. Be sure to get a copy, as these will be very helpful in studying for the exam.

14.124: Microeconomic Principles IV

Structure:

Spring

Half-semester course

Weekly lectures: Tuesday and Thursday 1-2.30 p.m

Weekly recitation: Friday 1-2.30 p.m

1 final examination (in class)

Total credit: 6 units

Pre-requisites: 14.123

Syllabus:

The topic of the class is information economics. The purpose is to give an introduction to some of the main subjects in this field: risk sharing, moral hazard, adverse selection (signaling, screening), mechanism design, decision making under uncertainty, incentive and contract theory.

Primary text:

MasCollé, A., M. Whinston, and J. Green, *Microeconomic Theory* (New York: Oxford University Press, 1995).

Supplementary texts:

Varian, H., *Microeconomic Analysis* (3rd edition) (New York: Norton, 1992).

Kreps, D., *A Course in Microeconomic Theory*, (Princeton: Princeton University Press, 1990).

Student Comments:

Before the exam, the TA typically hands out copies of previous years' exams. Be sure to get a copy, as these will be very helpful in studying for the exam.

14.381: Statistical Methods in Economics

Structure:

Fall

Weekly lectures: Tuesday and Thursday 9-10.30 a.m

Weekly recitation: Friday 9-10.30 a.m

90 minute midterm exam and 3 hour final exam.

Total credit: 12 units

Pre-requisites:

No prior preparation in probability and statistics is required, but familiarity with linear algebra and multivariate calculus is assumed. Students with a strong background in statistical theory and/or econometric theory are encouraged to waive the course requirement by taking the waiver exam.

Syllabus:

Self-contained introduction to probability and statistics as background for advanced econometrics. Elements of probability theory; sampling theory; asymptotic approximations; decision-theory approach to statistical estimation focusing on regression, hypothesis testing; and maximum-likelihood methods. Illustrations from economics and application of these concepts to economic problems

Required Texts:

The required text for the class is:

Casella, G. and R.L. Berger, *Statistical Inference*, (Second Edition. Duxbury Press, 2002)

Other useful references are:

Cox, D.R. and D.V. Hinkley, *Theoretical Statistics*. (CRC Press, 1974).

DeGroot, M.H. and M.J. Schervish, *Probability and Statistics*, (Third Edition. Addison-Wesley, 2002).

Additional information:

The primary objective of this course is to provide an introduction to mathematical statistics necessary for the subsequent study of econometrics and economic theory. Grading will be based on performance on the problem sets (20%), the mid-term exam (30%), and the final exam (50%).

14.382: Econometrics 1

Structure:

Spring

Weekly lectures: Monday and Wednesday 2.30-4.00 p.m

Weekly recitation: Friday 2.30-4.00 p.m

Midterm and final examination.

Total credit: 12 units

Pre-requisites:

Students be prepared in linear algebra at the level of 14.102 or equivalent. (see link: <http://student.mit.edu/@2846679.11656/catalog/index.cgi>). They should also know mathematical statistics at the level of 14.381 or equivalent.

Syllabus:

Specification and estimation of the linear regression model. Departures from the standard Gauss-Markov assumptions include heteroskedasticity, serial correlation, and errors in variables. Advanced topics include generalized least squares, instrumental variables, nonlinear regression, and limited dependent variable models. Economic applications are discussed.

Required Texts:

Wooldridge, J.M, Econometric Analysis of Cross Section and Panel Data (MIT Press)

Greene, W.H., Econometric Analysis (Prentice Hall, 1999, 5th edition)

Additional information:

Course requirements include completion of about six problem sets, a midterm, and a final exam.

Student Comments:

While the textbooks are somewhat helpful as references, the treatment and notation are often different from those used in class. The notes from previous TAs are invaluable.

14.383: Econometrics II

Structure:

Fall

Weekly lectures: Monday and Wednesday 1-2.30 p.m

Weekly recitation: Friday 1-2.30 p.m

1 final examination

Total credit: 12 units

Pre-requisites:

Students should not take this course for credit unless they have previously taken 14.382 or have the permission of the instructor.

Syllabus:

Covers identification and estimation of linear and nonlinear simultaneous equations models. Requires econometrics paper due at the end of IAP.

Primary texts:

- J. Hausman, "Specification and Estimation of Simultaneous Models" in Z. Griliches and M. Intriligator (eds.), *Handbook of Econometrics*, Vol. 1, 1983, 391-448.
www.elsevier.com/homepage/sae/econworld/hes.htm
- W. Greene, *Econometric Analysis*, (Prentice Hall, 1999, 5th edition)
- P. Ruud, *An Introduction to Classical Econometric Theory*, New York: Oxford University Press, 2000.
- H. Thiel, *Principles of Econometrics*, 1971.
- H. White, *Asymptotic Theory for Econometricians*, 1984.
- J. Wooldridge, *Econometric Analysis of Cross Section and Panel Data*, 2002

Supplementary Texts:

- T. Amemiya, *Advanced Econometrics*, 1985.
- D. Cox and D. Hinkley, *Theoretical Statistics*, 1974.
- E. Malinvaud, *Statistical Methods of Econometrics* (2nd or 3rd ed.).

Additional information:

The course work will consist of three problem sets and a final examination.

14.384: Time Series Analysis

Structure:

Fall
Half-semester course
Weekly lectures: Tuesdays and Thursdays 2.30-4.00 p.m
Weekly recitation: Wednesday 4-5.30 p.m
1 final examination
Total credit: 6 units

Pre-requisites: Students should have taken 14.383 or equivalent.

Syllabus:

Theory and application of time series methods in econometrics, including representation theorems, decomposition theorems, prediction, spectral analysis, estimation with stationary and nonstationary processes, VARs, unit roots, and cointegration.

Required reading:

Primary text:
Hamilton, J., *Time Series Analysis*. (Princeton University Press, 1994)

Other useful references are:

Brockwell, P. and R. Davis. *Time Series: Theory and Methods*, Second Edition. Springer-Verlag,

1991.

Enders, W. Applied Economic Time Series, Second Edition. Wiley, 2004.

Hayashi, F. Econometrics. Princeton University Press, 2000.

Additional information:

This course provides an introduction to univariate and multivariate time series analysis. It starts by introducing basic concepts and models and progresses to more complicated models. The course intends to provide tools for empirical work with time series data and to give an introduction to the theoretical foundations of time series analysis. Grading will be based on performance on the problem sets (30%) and the final exam (70%).

14.385: Nonlinear Econometric Analysis

Structure:

Fall

Half-semester course

2 weekly lectures and 1 weekly recitation

1 final examination

Total credit: 6 units

Pre-requisites: Students should have taken 14.383 or equivalent

Syllabus:

Micro-econometric models, including large sample theory for estimation and hypothesis testing, generalized method of moments, estimation of censored and truncated specifications and duration models, nonparametric and semiparametric estimation, panel data, bootstrapping, and simulation methods. Methods illustrated with economic applications.

Primary text:

Wooldridge, J.M, Econometric Analysis of Cross Section and Panel Data (MIT Press)

Supplementary texts:

P. Ruud, An Introduction to Classical Econometric Theory, New York: Oxford University Press, 2000.

Z.Griliches and M.Intriligator , Handbook of Econometrics , Vol 1-5

Additional information:

The course will cover fundamental methods for microeconomic data, including maximum likelihood, GMM, quantile regression, nonparametric regression, treatment effects, and the bootstrap. Both theory and applications will be included in the course. The course requirements are a final examination and three problem sets. The problem sets include empirical exercises.

14.661 Labor Economics I

Structure:

Fall
2 weekly lectures and 1 weekly recitation
1 final examination
Total credit: 12 units

Pre-requisites: 14.04, 14.32

Syllabus:

Neoclassical analysis of the labor market and its institutions. A systematic development of the theory of labor supply, labor demand, and human capital. Topics discussed also include wage and employment determination, turnover, search, unemployment, equalizing differences, and institutions in the labor market. Particular emphasis on the interaction of theoretical and empirical modeling.

Required Texts:

O. Ashenfelter and R. Layard, *The Handbook of Labor Economics*, Volumes 1 & 2, North-Holland, 1986; Volume 3A, 3B & 3C, 1999.
(CZ) Pierre Cahuc and Andre Zilberberg (2004) *Labor Economics* MIT Press.

For reference:

Laffont, Jean-Jacques and David Martimort (2002), *The Theory of Incentives: The Principal-Agent Model*, Princeton University Press,
Pissarides, Christopher (2000); *Equilibrium Unemployment Theory*, MIT Press,
Lazear, Edward (1995) *Personnel Economics*, MIT Press.

Additional information:

The aim of this course is to acquaint students with traditional topics in labor economics and to encourage the development of independent research interests. Prerequisites include intermediate microeconomics and econometrics.

Class requirements:

In addition to readings, there will at least three graded problem sets, an empirical project involving replication or extension of published work, and a final exam.

14.662 Labor Economics II

Structure:

Spring
Weekly lectures: Tuesdays and Thursdays 10.30-12.00 p.m
Weekly recitation: Wednesday 12-1. p.m
1 final examination
Total credit: 12 units

Pre-requisites:

14.64 or 15.660

Syllabus:

The development and evolution of labor market structures and institutions. Particular focus on competing explanations of recent developments in the distribution of wage and salary income and in key institutions and organizational structures. Special attention to theories of worker motivation and behavior, the determination of wages, technology, and social stratification.

15.220 International Management

Structure:

Spring
Half-semester course
2 weekly lectures
1 final examination
Total credit: 6 units

Pre-requisites: 15.010

Syllabus:

Focuses on the international dimensions of strategy and organization, and provides a framework for formulating strategies in an increasingly complex world economy, and for making those strategies work effectively. Topics include the globalization of industries, the continuing role of country factors in competition, organization of multinational enterprises, building global networks, and the changing managerial tasks under conditions of globalization.

Required Texts:

Anil Gupta and Eleanor Westney, eds., *Smart Globalization: Designing Global Strategies, Creating Global Networks* (Jossey-Bass, 2003).

In addition, it is strongly recommended that you purchase a copy of Yves Doz, Jose Santos, and Peter Williamson, *From Global to Metanational: How Companies Win in the Knowledge Economy* (Harvard Business School Press, 2002).

There is also a packet of readings available. Additional readings will be posted on the course website.

Additional information:

Companies today confront an increasing array of choices of markets, of locations for value adding activities, and of modes of crossing borders. This course focuses on the international dimensions of strategy and organization, and provides a framework for formulating strategies in an increasingly complex world economy, and for making those strategies work effectively.

The first section of the course provides the basic frameworks for understanding competitiveness in international business at the level of the industry, location, and firm. These frameworks identify the opportunities presented in a dynamic global environment. But taking advantages of those opportunities faces enormous managerial challenges, and the second section of the course focuses on using and deepening those analytical tools in the context of specific problems and

Builds upon relevant economic theories and methodologies to analyze the changes in organization and markets enabled by Information Technology, especially the internet. Typical perspectives examined include industrial organization and competitive behavior, price theory, information economics, intangible asset valuation, consumer behavior, search and choice, auctions and mechanism design, transactions cost economics and incomplete contracts theory, and design of empirical studies. Extensive reading and discussion of research literature aimed at exploring the application of these theories to business issues and challenges raised by the internet and related technologies.

15.576 Research Seminar in Information Technology and Social Perspectives

Structure:

Fall

Total Credits: 12

Alternate years

Syllabus:

Examines the assumptions, concepts, theories, and methodologies that inform research into the behavioral aspects of information technology. Extensive reading and discussion of research literature aimed at exploring micro, group, and macro level social phenomena surrounding the development, implementation, use and implications of information technology in organizations.

15.676 Work, Employment, and Industrial Relations Theory

Structure:

Spring

Total Credits: 9

Syllabus:

Historical evolution and assessment of different theories and disciplinary perspectives used in research on work, employment, and industrial relations. Introduces doctoral students to the field and explores where their research interests fit within the broader field. First part compares the normative assumptions, theories, and methodologies used by economists, historians, sociologists, psychologists, political scientists, and legal scholars from the latter nineteenth century to the present. Final portion explores strategies for advancing research on topics of current interest to participants.

15.677J Urban Labor Markets and Employment Policy

Structure:

Spring

Total Credits: 12

Syllabus:

Subject discusses the broader trends in the labor market, how urban labor markets function, pub-

lic and private training policy, other labor market programs, the link between labor market policy and economic development, and the organization of work within firms.

15.764: Theory of Operations Management

Structure:

Spring

Total Credits: 9

Syllabus:

Focus on theoretical work for studying operations planning and control problems. Topics vary from year to year, and include supply chain design and coordination, logistic and distribution systems, make-to-order systems, call centers and service operations, procurement, pricing, revenue management, the sales/production interface, inventory theory, flexible manufacturing systems.

15.799: Workshop in Operations Management

Structure:

Fall, Spring

Total Credits: Arranged

Mondays, 11:30 – 1pm

Syllabus:

Presentations by faculty, doctoral students, and guest speakers of ongoing research relating to current issues in operations management, including reports of research projects (proposed or in progress) and informal discussions of recent literature dealing with subjects of special interest to participants.

15.838: Workshop in Marketing

Structure:

Spring

Total credits: 9

Fridays, 2:30 – 5:30

Pre-requisites: 15.810 or equivalent

Syllabus:

Seminar on current marketing literature and current research interests of faculty and students. Topics such as marketing models, consumer behavior, competitive strategy, marketing experimentation, and game theory.

15.839: Workshop in Marketing

Structure:

Spring, Fall

Pass/Drop/Fail

Total Credits: Arranged
Thursdays, 4-5:30pm

Syllabus:

Presentations by faculty, doctoral students, and guest speakers of ongoing research relating to current issues in marketing. Topics: reports of research projects (proposed or in progress) and informal discussions of recent literature dealing with subjects of special interest to participants.

15.874: System Dynamics for Business Policy

Structure:

Spring, Fall

Weekly lectures: Tuesday and Thursday 10.00-11.30 a.m

Weekly recitation

Total credit: 12 units

Pre-requisites:

Permission of instructor

Syllabus:

Studies why so many business strategies fail. Full-term introduction to system dynamics modeling applied to corporate strategy. Uses simulation models, management “flight simulators,” and case studies to develop conceptual and modeling skills for the design and management of high-performance organizations in a dynamic world. Case studies of successful applications of system dynamics in growth strategy, management of technology, operations, project management, and others. Principles for effective use of modeling in the real world. Prerequisite for further work in the field.

Required Texts:

Sterman, J. *Business Dynamics: Systems Thinking and Modeling for a Complex World*. Irwin/McGraw Hill, 2000. ISBN 0-07-238915-X (Text and CD-ROM); see the textbook’s web site for information about the book, including software models.

Reading packet (available from the campus copy center). The packet includes selected articles and case studies required for certain sessions and supplements the book.

For reference:

In addition, modeling software will be used. Several excellent packages for system dynamics simulation are available commercially, including iThink, from High Performance Systems, Powersim from Powersim Corporation, and Vensim®, from Ventana Systems. All are highly recommended. You may wish to learn more about these packages, as all are used in the business world, and expertise in them is increasingly sought by potential employers.

Additional information:

15.871 (Introduction to System Dynamics) is a half semester (6 unit) course. 15.874 (System Dynamics for Business Policy) is a full semester (12 unit) course. The two courses meet concur-

rently during the first half of the term and are the same. In the second half of the semester, 15.874 continues.

This course introduces you to system dynamics modeling for the analysis of business policy and strategy. You will learn to visualize a business organization in terms of the structures and policies that create dynamics and regulate performance. System dynamics allows us to create 'microworlds,' management flight simulators where space and time can be compressed, slowed, and stopped so we can experience the long-term side effects of decisions, systematically explore new strategies, and develop our understanding of complex systems. We use role playing games, simulation models, case studies, and management flight simulators to develop principles of policy design for successful management of complex strategies. Case studies of successful strategy design and implementation using system dynamics will be stressed. We consider the use of systems thinking to promote effective organizational learning.

The principle purpose of modeling is to improve our understanding of the ways in which an organization's performance is related to its internal structure and operating policies as well as those of customers, competitors, and suppliers. During the course you will use several simulation models to explore such strategic issues as fluctuating sales, production and earnings; market growth and stagnation; the diffusion of new technologies; the use and reliability of forecasts; and the rationality of business decision making.

Students will learn to recognize and deal with situations where policy interventions are likely to be delayed, diluted, or defeated by unanticipated reactions and side effects. You will have a chance to use state of the art software for computer simulation and gaming. Assignments give hands-on experience in developing and testing computer simulation models in diverse settings. No prior computer modeling experience is needed.

Grading:

Assignments: 85%

Class participation: 15%

Student Comments:

15.875: Applications of System Dynamics

Structure:

Spring

Weekly lectures: Tuesday and Thursday 2.30-4.00 p.m

Weekly recitation

Total credit: 9 units

Pre-requisites:

Permission of instructor

Syllabus:

Explores how organizations can use system dynamics to achieve important goals. Student teams work with client managers to tackle the clients' most pressing issues. Students discuss experi-

ences with their clients, and learn modeling and consulting skills they need to be effective. Focus on gaining practical insight from the system dynamics process. Projects are sponsored by diverse organizations from a range of industries and sizes from start-ups to the Fortune 500.

Required Texts:

Chapters are assigned weekly from the course textbook:

Schein, Edgar H. *Process Consultation Revisited: Building the Helping Relationship*. Prentice Hall, 1998. ISBN: 020134596X.

(The textbook is secondary to the handouts listed under lecture notes.)

Additional information:

15.875 explores how organizations can use system dynamics to achieve important goals. Student teams work with managers to tackle the clients' most pressing issues. Students discuss experiences with their clients, and learn the modeling and consulting skills they need to be effective. Projects are sponsored by diverse organizations from a range of industries and sizes from start-ups to the Fortune 500. This course focuses on gaining practical insight from the system dynamics process, and appeals to people interested in system dynamics, consulting, or managerial policy-making.

Course Format:

This project-based course meets for two 90-minute sessions each week. Prof. James Hines lectures in the first meeting of each week, while keeping the class highly interactive. In the other session, the class splits into two or three groups for "break out sessions" led by Prof. Hines or a teaching assistant. In each of these sessions, students give presentations to the group about the project work they've done the previous week.

At the first class, students form groups of two to four members and are given a list of potential project topics. Each project is sponsored by a company or organization, who will act as the students' client throughout the semester.

Grading:

A student's grade for the course is based on his or her performance on the team project.

15.879: Research Seminar in System Dynamics

Structure:

Fall

Total Credits: 12

Pre-requisites: 15.874

Syllabus:

Doctoral level seminar in system dynamics modeling, with a focus on social, economic and technical systems. Covers classic works in dynamic modeling from various disciplines and current research problems and papers. Participants critique the theories and models, often including replication, testing, and improvement of various models, and lead class discussion. Topics vary from year to year.