



# Graduate School of Management and Economics

SHARIF UNIVERSITY OF TECHNOLOGY





**For further information, contact:**

Graduate School of Management and Economics

Sharif University of Technology

Azadi Avenue, Tehran, I.R. Iran

Tel: +98 21 6602 2755

Fax: +98 21 6602 2759

Email: [info@gsme.sharif.edu](mailto:info@gsme.sharif.edu)

<https://www.gsme.sharif.edu>

**International Affairs' Office**

Sharif University of Technology

Azadi Avenue, Tehran, I.R. Iran

P.O. Box: 11155/8639

Tel: +98 21 6616 4780

Fax: +98 21 6602 2724

Email: [ia@sharif.ir](mailto:ia@sharif.ir)

[www.ia.sharif.edu](http://www.ia.sharif.edu)

**Design by:** Hamed Amanollahi

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## Graduate School of Management and Economics



**Address:** Graduate School of Management and Economics, Sharif University of Technology, Shahid Taimouri St., Azadi Ave.

**P.O. Box:** 11156-3516, Tehran, Iran.

**Telephone number:** +98-21-66165850

**Web site:** <http://gsme.sharif.edu/>

### Overview

The Graduate School of Management and Economics (GSME) at Sharif University of Technology established in 1999, offers a world-class education in economics and management at master's and PhD levels. Based on Times Higher Education World University Rankings 2021, Sharif University of Technology is among 201-250 top schools in the field of business and economics. This puts GSME has the first rank among national departments in this field. Several GSME faculty members are graduates of world-class universities such as MIT, Columbia, Chicago, LSE, Cambridge and UCL. Each year, we attract the best talents from a variety of majors to our masters programs. The school's graduates have been hired by private and public companies and organizations in Iran and abroad. Also, some have been engaged in entrepreneurial activities and established successful start-ups.

Department of management was the first to offer Master of Business Administration (MBA) in Iran, a two-year program which requires 17 compulsory courses. Each year, approximately 60 students enter our MBA program in various majors. Courses are regularly modified to meet the ever-changing needs of business ecosystems, and we learn from the experiences of the best business schools around the world. We offer MBA majors in finance, marketing, operation and supply chain, organizational behavior and human resources, technology, strategy, and information systems. The department also offers a Ph.D. degree in manage-

ment, with a maximum acceptance of 5 students each year.

Department of economics offers degrees at bachelor, master's, and doctorate levels. At the bachelor's level, we offer a minor degree in economics. The students are required to pass seven courses. This is offered as a joint degree for current B.Sc. students at Sharif University of Technology. At the master's level, we offer M.Sc. theoretical economics and M.Sc. energy economics. The M.Sc. economics degrees require passing 10 courses plus a thesis or 2 additional courses. In total, approximately 40 students are admitted to our M.Sc. economics degrees each year. We offer a Ph.D. economics degree as well, with about 4 students admitted each year.

The school runs an executive education certificate programs and has so far provided executive education certificate programs to more than 1000 candidates from a variety of industries in Iran and neighboring countries. Our programs meet international standards, and we always seek to offer joint programs in collaboration with world-class schools. Besides developing individual and group skills in management, participants have the chance to grow their networks which can help them find new business opportunities.

Departments of management and economics have regular research seminars where Ph.D. students and faculties from the school or other institutions present their work. Often, we have speakers from GSME alumni who are researchers around the world. The department also hosts regular seminars where practitioners and policymakers present their perspectives. The list of past and current events are available from the school's website.

GSME faculty members have extensive collaboration with business and policy makers which are reflected in the long list of consultancy projects carried out by the team. The following list is a sample of past policy/business projects:

- ★Industrial Development Strategy for Iran
- ★Optimum Government Size to Achieve Maximum Economic Growth
- ★Economics and ICT Market of Iran
- ★Assessing Real Estate Financial Subsidies
- ★Role and Responsibilities of Industrial Parks
- ★Technology Development Strategy for the Power Sector
- ★Supply Chain Management and Logistics for Iran Grain Organization
- ★Organizational Self-assessment Projects
- ★Organizational Customer Relationship Management (CRM) Projects



## Management



### Seyed Babak Alavi

Associate Professor, Ph.D. University of New South Wales, Australia.

Research Interests: Authentic Leadership, Motivation, Teamwork, Team Cognition, Coaching and Mentoring, Performance Management.



### MohammadReza Arasti

Associate Professor, PhD University of Grenoble, France.

Research Interests: Strategic Planning, Strategic Technology Management, Innovation Management, New Product Design.



### Shirin Aslani

Assistant Professor, PhD Sharif University of Technology, Iran.

Research Interests: Business Analytics, Revenue Management & Dynamic Pricing, Marketing Research.



### Mohsen Bahramgiri

Assistant Professor, PhD Massachusetts Institute of Technology, USA.

Research Interests: Investment Management, Financial Management, Startup Financial Management.



### AliReza Feizbakhsh

Assistant Professor, PhD University of Electro-communications, Japan.

Research Interests: Entrepreneurship, Enterprise Entrepreneurship, Organization and Organizational Change, Leadership and Organizational Behavior, Artificial Intelligence.



### MohammadTaghi Isaai

Associate Professor, PhD University of Manchester, UK.

Research Interests: Knowledge Management, Decision Making (Behavioral, Data-driven, Organizational), Digital Transformation (E-commerce, Intelligent Transportation Systems).



### Mohammadmehdi Jahanbakht

Assistant Professor, Ph.D. Carnegie Mellon University, USA.

Research Interests: Data-driven Research in Entrepreneurship, Data-driven Research in Technology Management, Data-driven Research in Innovation Policy.



### Naser Karami

Assistant Professor, PhD University of Tokyo, Japan.

Research Interests: Management Information System, E-commerce, Marketing, Customer-relationship Management, Knowledge Management.



### ★ Ali Kermanshah

Emeritus Assistant Professor, PhD University of Manchester, Institute for Science & Technology, UK.

Research Interests: Strategic Management, Technology and Innovation Management.



### Arash Khali Nasr

Assistant Professor, PhD Tarbiat Modares University, Iran.

Research Interests: Strategic Management, Strategic Implementation, International Business, Holding Companies' Strategies, Research Method, Social Responsibility.



### Mahdi Kiamehr

Assistant Professor, PhD The Centre for Research in Innovation Management, University of Brighton, UK.

Research Interests: Catch-up, Innovation Management, Product Development Management, Launching New Products.



### ★ AliNaghi Mashayekhi

Emeritus Professor, PhD Massachusetts Institute of Technology, USA.

Research Interests: Dynamic Systems, Organizational Learning, Strategic Planning, Strategic Management, Management Control Systems, Organization Theories in Management.



### Seyed Alireza Mirbagheri

Assistant Professor, Ph.D. Sharif University of Technology, Iran.

Research Interests: Marketing Strategy, Brand Management, Digital Marketing and Social Media, Customer Experience, Online and Offline Retail.



### Seyed Iman Miremadi

Assistant Professor, PhD Sharif University of Technology, Iran.

Research Interests: Energy, Technological Innovation Systems, Technology and Innovation Management.



### Atieh Mirfakhar

Assistant Professor, Ph.D. ES-ADE Business School Universitat Ramon Llull, Spain.

Research Interests: Human Resources Management, Performance Management and Feedback, HRM Implementation, Change Management.



### AbdolHamid Modares

Associate Professor, PhD University of Tokyo, Japan.

Research Interests: Financial Management, Management of Innovation and Business Development.



### Manoochehr Najmi

Associate Professor, PhD University of Liverpool, UK.

Research Interests: Quality Management and Excellence Models, Marketing, Process and Performance Management.



### Marzieh Saghafian

Assistant Professor, PhD York University, Canada.

Research Interests: Organizational Behavior, Teamwork Dynamics, Theory of Dynamic Systems, Temporal Analysis.



### Mehran Sepehri

Associate Professor, PhD Stanford University, USA.

Research Interests: Operations and Supply Chain Management, Project and Portfolio Management, Strategic Management, Risk and Resiliency, Engineering Management, Quantitative Methods.



**Masoud Shadnam**

Assistant Professor, Ph.D. Simon Fraser University, Canada.

Research Interests: Theorizing in Organization Studies, Business and Professional Ethics, Culture in Organization and Society, Critical Management Studies, Organizational Sociology.

**Mahdi Sheikhzadeh**

Assistant Professor, PhD University of Minnesota, USA.

Research Interests:

Supply-chain Management, Design Systems, Manage Marketing Channels, Operation Management, Pricing Management.

**Ebrahim Souzanchi**

Assistant Professor, PhD Science Policy Research Unit at University of Sussex, UK.

Research Interests: Principle of Organization and Management, Science, Technology and Innovation Management.

**Masoud Talebian**

Associate Professor, PhD Columbia University, USA.

Research Interests: Game Theory in Management, Revenue and Pricing Management, Strategic Planning.

**Misagh Tasavori**

Assistant Professor, PhD University of Manchester, UK.

Research Interests: International business and entrepreneurship, Data-driven strategy.

**Economics****Mahdi Ansari**

Assistant Professor, PhD University of Minnesota, USA.

Research Interests: Macroeconomics, Labor Market Economics, business dynamics, Digital Economics, Public Policy.

**HamidReza Arian**

Assistant Professor, PhD University of Toronto, Canada.

Research Interests: Alternative Investments, Hedge Funds, Machine Learning, Fixed Income Investments, Mortgage-Backed Securities, Interest Rate Modeling, Derivatives Products, Credit Risk, Energy Commodities.

**Ali Ebrahimnejad**

Assistant Professor, PhD Boston College, Carroll School of Management, USA.

Research Interests: Empirical Asset Pricing, Market Microstructure, Law and Finance, Regulation and Supervision of Financial Market.

**Seyed Farshad Fatemi Ardestani**

Assistant Professor, PhD University College London (UCL), UK.

Research Interests: Microeconomics, Industrial Organization, Market Design, Contract Theory.

**Seyed Ali Madanizadeh**

Associate Professor, PhD University of Chicago, USA.

Research Interests: Macroeconomics, International Trade, Industrial Organization.

**Amineh Mahmoudzadeh**

Assistant Professor, PhD Sharif University of Technology, Iran.

Research Interests: Macroeconomics, Monetary and Fiscal Policies, Corporate Finance, Economy of Iran.

**★ Masoud Nili**

Emeritus Associate Professor, PhD University of Manchester, UK.

Research Interests: Macroeconomics, International Macroeconomics, Political Economics, Economy of Iran.

**GholamReza Keshavarz Haddad**

Associate Professor, PhD University of Tehran, Iran.

Research Interests: Microeconomics, Econometrics, Labor Market, Financial Econometrics.

**Mohammad Hossein Rahmati**

Associate Professor, PhD University of Texas - Austin, USA.

Research Interests: Macroeconomics, Energy Economics, Industrial Organization, Law and Economics.

**Mohammad Vesali**

Associate Professor, PhD London School of Economics and Political Science (LSE), UK.

Research Interests: Public Economics, Development Economics, Taxation, Education.

**Kowsar Yousefi**

Associate Professor, University of Texas at Austin, USA.

**Shiva Zamani**

Associate Professor, PhD Sharif University of Technology, Iran

Research Interests: Stochastic Differential Equations, Mathematical Finance, Financial Economics.

# Programs



## Minor in Economics

### Admissions

Admission to Minor in Economics is open to all second-year B.Sc. students with GPA above 15 at Sharif University of Technology. Entry into the program requires successful completion of the principles of economics course. Approximately, 30 students enter minor in economics.

### Requirements

Students must complete 5 core courses and 2 optional courses according to the lists in the following table.

#### ● Core Courses

Students must complete the following courses:

-	Probability and Statistics	44714	Principles of Economics
44719	Introduction to Microeconomics	44728	Introduction to Macroeconomics
44720	Introduction to Econometrics		

#### ● Optional Courses

Students must complete a minimum of 2 courses from the following list:

44733	Introduction to Economic Growth	44737	Introduction to Financial Economics
44739	Introduction to Money and Banking	44738	Introduction to Development Economics
44624	Introduction to Political Economics	44698	Introduction to International Trade
44741	Introduction to Industrial Organization		

#### ● Suggested Study Program

	3rd Sem.	4th Sem.	5th Sem.	6th Sem.	7th Sem.	8th Sem.
Core Courses	Principles of Economics	Introduction to Macroeconomics	Introduction to Microeconomics	Introduction to Econometrics		
Optional Courses				Take 1 or 2 option courses	Take 1 or 2 option courses	Take 1 or 2 option courses





# Majors

The school offers MBA degrees in 7 majors and 2 M.Sc. degrees in Economics. It also offers Ph.D. degrees in Economics and Management. Department of economics also provides a minor in economics for current B.Sc. students at Sharif University of Technology.



## M.Sc. in Economics

### Admissions

Admission to M.Sc. in Theoretical Economics is either through talents admission route or national university entrance exam (concour) for Iranian nationals. For international students, please seek advice from the international affairs office. The number of students admitted to this major from concour is around 18 students for each year.

### Requirements

Students must complete 7 core and 3 optional courses according to the lists in the following tables. It is strongly recommended that students take a M.Sc. thesis as a substantive piece of research. However, students can choose to take two additional optional courses instead. Please note that not all optional courses are offered during each semester. The usual length of study for this major is 5 semesters but students with a solid background can finish the major in 4 semesters. Students often start working on their M.Sc. thesis during the third semester and defend it in the fifth semester. There are two strands with different sets of core and optional courses. A theory strand is focusing on theoretical courses, and the financial economics strand providing specialized courses in finance. The requirements for these two strands are similar and there would be no distinction between the awarded degrees.

#### ● M.Sc. in Theoretical Economics, the Theory Strand

##### ● Pre-requisite Courses

Students without undergraduate background in economics must take the following course as a pre-requisite:

44714	Principles of Economics
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##### ● Core Courses

Students must complete the following courses:

44715	Microeconomics I	44710	Macroeconomics I
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44706	Microeconomics II	44622	Macroeconomics II
44716	Econometrics I	44712	Mathematical Economics

Students must at least choose one of the following courses:

44709	Econometrics II	44726	Econometrics of Financial Time Series
44731	Applied Econometrics		

##### ● Optional Courses

Students must complete a minimum of 3 courses from the following list:

44423	Development Economics	44742	Market Design
44721	Financial Economics I	44772	Industrial Organization
44722	Financial Economics II	44713	Economy of Iran
44621	Research Method	44771	Political Economics
44616	Financial Engineering	44625	Game Theory
44626	Quantitative Economics	44747	Public Economics
44734	Islamic Banking	44729	Islamic Economics
44623	Contract Theory	44735	Economics of Banking
44746	Energy Economics	44745	Energy Finance

##### ● Suggested Program of Study

	First Sem.	Second Sem.	Third Sem.	Fourth Sem.
Core Courses	Microeconomics I (44715)	Microeconomics II (44706)	Macroeconomics II (44622)	Thesis
	Econometrics I (44716)	Macroeconomics I (44710)		
	Mathematical Economics (44712)			
One of the Three Courses		Econometrics II (44709)	Applied Econometrics (44731)	
		Econometrics of Financial Time Series (44726)		
Optional Courses		Financial Economics I (44721)	Economy of Iran (44713)	Game Theory (44625)
		Industrial Organization (44772)	Market Design (44742)	Financial Engineering (44616)

Optional Courses			Financial Economics II (44722)	Development Economics (44423)
			Selected Topics in Public Choice and Political Economics (44771)	Research Method (44621)

### ● MSc in Theoretical Economics, the Financial Economics Strand

#### ● Pre-requisite Courses

Students without undergraduate background in economics must take the following course as a pre-requisite:

44714	Principles of Economics		
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#### ● Core Courses

Students must complete the following courses:

44715	Microeconomics I	44710	Macroeconomics I
44721	Financial Economics I	44722	Financial Economics II
44716	Econometrics I	44712	Mathematical Economics

Students must at least choose one of the following courses:

44709	Econometrics II	44726	Econometrics of Financial Time Series
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#### ● Optional Courses

Students must complete a minimum of 3 courses from the following list:

44617	Risk Management and Evaluation	44616	Financial Engineering
44706	Microeconomics II	44731	Applied Econometrics
44622	Macroeconomics II	44619	Selected Topics in Finance
44621	Research Method	44171	Advanced Financial Management
44734	Islamic Banking	44735	Economics of Banking
44772	Industrial Organization	44625	Game Theory
44747	Public Economics	44742	Market Design
44423	Development Economics		

#### ● Suggested Program

	First Sem.	Second Sem.	Third Sem.	Fourth Sem.
Core Courses	Microeconomics I (44715)	Financial Economics I (44721)	Financial Economics II (44722)	Thesis
	Econometrics I (44716)	Macroeconomics I (44710)		

Core Courses	Mathematical Economics (44712)			
One of the Two Courses		Econometrics II (44709)	Econometrics of Financial Time Series (44726)	
Optional Courses		Microeconomics II (44706)	Financial Engineering (44616)	Risk Management and Evaluation (44617)
			Market Design (44742)	Development Economics (44423)
			Applied Econometrics (44731)	Industrial Organization (44772)
			Macroeconomics II (44622)	Research Method (44621)



## M.Sc. in Energy Economics

### Admissions

Admission to M.Sc. in Energy Economics is either through talents admission route or national university entrance exam (concour) for Iranian nationals. For international students, please seek advice from the international affairs office. The number of students admitted to this major from concour is around 9 students for each year.

### Requirements

Students must complete 8 core and 2 optional courses according to the lists in the following tables. It is strongly recommended that students take M.Sc. Thesis as a substantive piece of research. However, students can choose to take two additional optional courses instead. Please note that not all optional courses are offered during each semester. The usual length of study for this major is 5 semesters but students with a solid background can finish the major in 4 semesters. Students often start working on their M.Sc. thesis during the third semester and defend it in the fifth semester.



### ● Pre-requisite Courses

Students without undergraduate background in economics must take the following course as a pre-requisite.

44714	Principles of Economics
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### ● Core Courses

Students must complete the following courses:

44715	Microeconomics I	44710	Macroeconomics I
44746	Energy Economics	44712	Mathematical Economics
44716	Econometrics I	46362	Energy Engineering

Students must at least choose one of the following courses:

44709	Econometrics II	44731	Applied Econometrics
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Students must at least choose two of the following courses:

44713	Economy of Iran	44745	Energy finance
44772	Industrial Organization	46312	Energy Systems Analysis

### ● Optional Courses

Students must complete a minimum of 2 courses from the following list:

44423	Development Economics	44621	Research Method
44706	Microeconomics II	44622	Macroeconomics II
44725	International Trade	-	Natural Resource Economics
-	Energy Sector Regulation	-	Energy Business

### ● Suggested Program of Study

	First Sem.	Second Sem.	Third Sem.	Fourth Sem.
Remedial	Principles of Economics (44714)			
Core Courses	Microeconomics I (44715)	Macroeconomics I (44710)	Energy Economics (44746)	Thesis
	Econometrics I (44716)			
	Mathematical Economics (44712)			

Core Courses	Energy Engineering (46362)			
One of two		Econometrics II (44709)	Applied Econometrics (44731)	
Two of four		Industrial Organization (44772)	Economy of Iran (44713)	
		Oil and gas finance (44736)	Energy Systems Analysis (?)	
Optional Courses		Microeconomics II (44706)	Macroeconomics II (44622)	Development Economics (44423)
				Research Method (44621)



## MBA in Finance

### Admissions

Admission to MBA in Finance is either through talents admission route or national university entrance exam (concour) for Iranian nationals. For international students, please seek advice from the international affairs office. The number of students admitted to this major from concour is around 12 students for each year.

### Requirements

Students must complete 8 core courses, 5 finance specialization courses, and 2 optional courses according to the lists in the following tables. It is strongly recommended that students take M.Sc. thesis as a substantive piece of research work. However, students can choose to take two additional optional courses instead of M.Sc. thesis. Please note that not all optional courses are offered during each semester. The usual length of study for this major is 5 semesters. Students often start working on their thesis during the fourth semester and defend it in the fifth semester.

## ● Core Courses

Students must complete the following 8 courses:

44029	Accounting & Data Analysis	44155	Managerial Economics
44168	Organization Behavior	44311	Corporate Finance
44173	Organization Theory & Design	44281	Operations Management
44224	Marketing Management	44161	Strategic Management

Students must choose 5 courses from the following specialization courses:

44317	Financial Institution and Markets	44755	Asset Pricing
44726	Econometrics of Financial Time Series	44313	Investment Management
44617	Risk Management and Evaluation	44172	Real Estate Finance and Investment
44177	Cases in Corporate Finance	44129	Venture Capital Investment
44135	Banking	44145	Business of Block chain Technology
44616	Financial Engineering	44172	Case in Corporate Finance

Students have an option to choose 2 courses from other areas of specialization.

Students should take a thesis or replace it with 2 courses in their area of specialization.

## ● Suggested Study Program

	First Sem.	Second Sem.	Third Sem.	Fourth Sem.
Core Courses	Accounting & Data Analysis (44029)	Corporate Finance (44311)		
	Organization Behavior (44168)	Operations Management (44281)		
	Organization Theory & Design (44173)	Strategic Management (44161)		
	Managerial Economics (44155)	Marketing Management (44224)		
Specialized Courses			Taking four courses of the Finance basket	Taking one course of the Finance basket
General Courses				Taking two courses from the offered ones

The thesis is taken in the fourth and fifth semesters.



## MBA in Marketing

### Admissions

Admission to MBA in Marketing is either through talents admission route or national university entrance exam (concour) for Iranian nationals. For international students, please seek advice from the international affairs office. The number of students admitted to this major from concour is around 12 for each year.

### Requirements

Students must complete 8 core courses, 5 marketing specialization courses, and 2 optional courses according to the lists in the following tables. It is strongly recommended that students take a M.Sc. thesis as a substantive piece of research work. However, students can choose to take two additional optional courses instead of a M.Sc. thesis. Please note that not all optional courses are offered during each semester. The usual length of study for this major is 5 semesters. Students often start working on their M.Sc. thesis during the fourth semester and defend it in the fifth semester.

## ● Core Courses

Students must complete the following 8 courses:

44029	Accounting & Data Analysis	44155	Managerial Economics
44168	Organization Behavior	44311	Corporate Finance
44173	Organization Theory & Design	44281	Operations Management
44224	Marketing Management	44161	Strategic Management

Students must choose 5 courses from the following specialization courses:

44131	Business Analytics	44125	Marketing Channels Management
44232	Marketing Strategy	44487	Pricing & Revenue Management
44233	Marketing Research	44476	Customer Relationship Management
44225	Brand Management	44929	Consumer Behavior
44226	Game Theory for Managers	44315	International Business
44431	International Marketing		E-commerce
	Marketing Communication	44133	Platform Business Models

Students have an option to choose 2 courses from other areas of specialization.

Students should take a thesis or replace it with 2 courses in their area of specialization.

### ● Suggested Study Program

	First Sem.	Second Sem.	Third Sem.	Fourth Sem.
<b>Core Courses</b>	Accounting & Data Analysis (44029)	Corporate Finance (44311)		
	Organization Behavior (44168)	Operations Management (44281)		
	Organization Theory & Design (44173)	Strategic Management (44161)		
	Managerial Economics (44155)	Marketing Management (44224)		
<b>Specialized Courses</b>			Taking four courses of the Marketing basket	Taking one course of the Marketing basket
<b>General Courses</b>				Taking two courses from the offered ones

The thesis is taken in the fourth and fifth semesters.



## MBA in Operation and Supply Chain Admissions

Admission to MBA in Operation and Supply Chain is either through talents admission route or national university entrance exam (concour) for Iranian nationals. For international students, please seek advice from the international affairs office. The number of students admitted to this major from concour is 12 for each year.

## Requirements

Students must complete 8 core courses, 5 operation and supply chain special courses, and 2 optional courses according to the lists in the following tables. It is strongly recommended that students take a M.Sc. thesis as a substantive piece of research work. However, students can choose to take two additional optional courses instead of a M.Sc. thesis. Please note that not all optional courses are offered during each semester. The usual length of study for this major is 5 semesters. Students often start working on their M.Sc. thesis during the fourth semester and defend it in the fifth semester.

### ● Core Courses

Students must complete the following 8 courses:

44029	Accounting & Data Analysis	44155	Managerial Economics
44168	Organization Behavior	44311	Corporate Finance
44173	Organization Theory & Design	44281	Operations Management
44224	Marketing Management	44161	Strategic Management

Students must choose 5 courses from the following specialization courses:

44131	Business Analytics	44314	Project Management
44243	Supply Chain Management	44283	Total Quality Management
44233	Marketing Research	44487	Pricing & Revenue Management
44276	Operations Strategy		E-Commerce
44476	Customer Relationship Management	44284	Product Development
44226	Game Theory for Managers	44151	Procurement & Contracts
44133	Platform Business Models		

Students have an option to choose 2 courses from other areas of specialization.

Students should take a thesis or replace it with 2 courses in their area of specialization.

### ● Suggested Study Program

	First Sem.	Second Sem.	Third Sem.	Fourth Sem.
<b>Core Courses</b>	Accounting & Data Analysis (44029)	Corporate Finance (44311)		
	Organization Behavior (44168)	Operations Management (44281)		
	Organization Theory & Design (44173)	Strategic Management (44161)		
	Managerial Economics (44155)	Marketing Management (44224)		
<b>Specialized Courses</b>			Taking four courses of the Operation basket	Taking one course of the Operation basket
<b>General Courses</b>				Taking two courses from the offered ones

The thesis is taken in the fourth and fifth semesters.





# MBA in Organizational Behavior and Human Resources

## Admissions

Admission to MBA in Organizational Behavior and Human Resources is either through talents admission route or national university entrance exam (concour) for Iranian nationals. For international students, please seek advice from the international affairs office. The number of students admitted to this major from concour is around 12 for each year.

## Requirements

Students must complete 8 core courses, 5 organizational behavior and human resources specialization courses, and 2 optional courses according to the lists in the following tables. It is strongly recommended that students take a M.Sc. thesis as a substantive piece of research work. However, students can choose to take two additional optional courses instead of a M.Sc. thesis. Please note that not all optional courses are offered during each semester. The usual length of study for this major is 5 semesters. Students often start working on their M.Sc. thesis during the fourth semester and defend it in the fifth semester.

### ● Core Courses

Students must complete the following 8 courses:

44029	Accounting & Data Analysis	44155	Managerial Economics
44168	Organization Behavior	44311	Corporate Finance
44173	Organization Theory & Design	44281	Operations Management
44224	Marketing Management	44161	Strategic Management

Students must choose 5 courses from the following specialization courses:

44169	Human Resource Management	44176	Organization Learning
44933	Advanced Organization Behavior	44261	System Dynamics Analysis
44909	Advanced Human Resource Management	44119	Communication & Negotiation
	Advanced Strategic Planning		Strategic Implementation
	Strategic Planning Practice	44316	Business Innovation
44454	Organization Leadership	44295	principles Of Entrepreneurship
44252	Change Management	44122	Management Decision Models
44315	International Business		

Students have an option to choose 2 courses from other areas of specialization.

Students should take a thesis or replace it with 2 courses in their area of specialization.

### ● Suggested Study Program

	First Sem.	Second Sem.	Third Sem.	Fourth Sem.
Core Courses	Accounting & Data Analysis (44029)	Corporate Finance (44311)		
	Organization Behavior (44168)	Operations Management (44281)		
	Organization Theory & Design (44173)	Strategic Management (44161)		
	Managerial Economics (44155)	Marketing Management (44224)		
Specialized Courses			Taking four courses of the OB/HR basket	Taking four courses of the OB/HR basket
General Courses				Taking two courses from the offered ones

The thesis is taken in the fourth and fifth semesters.



# MBA in Technology

## Admissions

Admission to MBA in Technology is either through talents admission route or national university entrance exam (concour) for Iranian nationals. For international students, please seek advice from the international affairs office. The number of students admitted to this major from concour is around 12 for each year.

## Requirements

Students must complete 8 core courses, 5 technology specialization courses, and 2 optional courses according to the lists in the following tables. It is strongly recommended that students take a M.Sc. thesis as a substantive piece of research work. However, students can choose to take two additional optional courses instead of a M.Sc. thesis. Please note that not all optional courses are offered during each semester. The usual length of study for this major is 5 semesters. Students often start working on their M.Sc. thesis during the fourth semester and defend it in the fifth semester.

## ● Core Courses

Students must complete the following 8 courses:

44029	Accounting & Data Analysis	44155	Managerial Economics
44168	Organization Behavior	44311	Corporate Finance
44173	Organization Theory & Design	44281	Operations Management
44224	Marketing Management	44161	Strategic Management

Students must choose 5 courses from the following specialization courses:

44246	Technology Transfer	44252	Change Management
44244	Strategic Management of Technology	44464	National Innovation System
44284	Product Development	44133	Platform Business Models
	Business of Block chain Technology	44444	Technology Forecasting
44509	Innovation, Development, and Technology		

Students have an option to choose 2 courses from other areas of specialization.

Students should take a thesis or replace it with 2 courses in their area of specialization.

## ● Suggested Study Program

	First Sem.	Second Sem.	Third Sem.	Fourth Sem.
<b>Core Courses</b>	Accounting & Data Analysis (44029)	Corporate Finance (44311)		
	Organization Behavior (44168)	Operations Management (44281)		
	Organization Theory & Design (44173)	Strategic Management (44161)		
	Managerial Economics (44155)	Marketing Management (44224)		
<b>Specialized Courses</b>			Taking four courses of the Technology basket	Taking four courses of the Technology basket
<b>General Courses</b>				Taking two courses from the offered ones

The thesis is taken in the fourth and fifth semesters.



## MBA in Strategy

### Admissions

Admission to MBA in Strategy is either through talents admission route or national university entrance exam (concour) for Iranian nationals. For international students, please seek advice from the international affairs office. The number of students admitted to this major from concour is around 12 for each year.

### Requirements

Students must complete 8 core courses, 5 strategy specialization courses, and 2 optional courses according to the lists in the following tables. It is strongly recommended that students take M.Sc. thesis as a substantive piece of research work. However, students can choose to take two additional optional courses instead of M.Sc. thesis. Please note that not all optional courses are offered during each semester. The usual length of study for this major is 5 semesters. Students often start working on their M.Sc. thesis during the fourth semester and defend it in the fifth semester.

## ● Core Courses

Students must complete the following 8 courses:

44029	Accounting & Data Analysis	44155	Managerial Economics
44168	Organization Behavior	44311	Corporate Finance
44173	Organization Theory & Design	44281	Operations Management
44224	Marketing Management	44161	Strategic Management

Students must choose 5 courses from the following specialization courses:

44178	Strategy Implementation	44261	System Dynamics Analysis
44215	Control, Budget & Perfect Management	44454	Organization Leadership
44176	Organization Learning	44226	Game Theory for Managers
44252	Change Management	44232	Marketing Strategy
44214	Advanced Strategic Planning	44316	Business Innovation
44244	Strategic Management of Technology	44213	Strategic Planning Practice
44315	International Business	44131	Business Analytics

Students have an option to choose 2 courses from other areas of specialization.

Students should take a thesis or replace it with 2 courses in their area of specialization.

● Suggested Study Program				
Core Courses	First Sem.	Second Sem.	Third Sem.	Fourth Sem.
	Accounting & Data Analysis (44029)	Corporate Finance (44311)		
	Organization Behavior (44168)	Operations Management (44281)		
	Organization Theory & Design (44173)	Strategic Management (44161)		
	Managerial Economics (44155)	Marketing Management (44224)		
Specialized Courses			Taking four courses of the Strategy basket	Taking four courses of the Strategy basket
General Courses				Taking two courses from the offered ones

The thesis is taken in the fourth and fifth semesters.

● Core Courses			
Students must complete the following 8 courses:			
44029	Accounting & Data Analysis	44155	Managerial Economics
44168	Organization Behavior	44311	Corporate Finance
44173	Organization Theory & Design	44281	Operations Management
44224	Marketing Management	44161	Strategic Management
Students must choose 5 courses from the following specialization courses:			
44115	Information Systems Management	44316	Business Innovation
44252	Change Management	44474	E-Commerce
44476	Customer Relationship Management	44482	Business Process Management
44133	Platform Business Models	44461	Knowledge Management
Students have an option to choose 2 courses from other areas of specialization.			
Students should take a thesis or replace it with 2 courses in their area of specialization.			

## MBA in Information Systems Admissions

Admission to MBA in Information Systems is either through talents admission route or national university entrance exam (concour) for Iranian nationals. For international students, please seek advice from the international affairs office. The number of students admitted to this major from concour is around 12 for each year.

## Requirements

Students must complete 8 core courses, 5 information systems specialization courses, and 2 optional courses according to the lists in the following tables. It is strongly recommended that students take M.Sc. thesis as a substantive piece of research work. However, students can choose to take two additional optional courses instead of M.Sc. thesis. Please note that not all optional courses are offered during each semester. The usual length of study for this major is 5 semesters. Students often start working on their M.Sc. thesis during the fourth semester and defend it in the fifth semester.

● Suggested Study Program				
Core Courses	First Sem.	Second Sem.	Third Sem.	Fourth Sem.
	Accounting & Data Analysis (44029)	Corporate Finance (44311)		
	Organization Behavior (44168)	Operations Management (44281)		
	Organization Theory & Design (44173)	Strategic Management (44161)		
	Managerial Economics (44155)	Marketing Management (44224)		
Specialized Courses			Taking four courses of the IS basket	Taking one course of the IS basket
General Courses				Taking two courses from all the offered ones

The thesis is taken in the fourth and fifth semesters.





# Master's Degree Program in Science and Technology Policy

## Admissions

Admission to the Master's program in Science and Technology Policy is through the entrance exam of Public Administration or in accordance with the regulations governing the admission of elites. Each year, 20 students enter this specialization through the entrance exam.

## Requirements

Throughout the course of study, students are required to complete 6 core courses, 2 specialized courses (choose from three specialized routes including digital, development, and energy), and 1 general elective course. It is recommended that students pay serious attention to their thesis as a research project. Although it is possible for students to transform their course into a more education-focused one by replacing two other elective courses instead of the thesis (a total of 3 elective courses), this option is available.

The usual duration for completing the program is 4 terms. Most students engage in thesis work during the third term and defend it at the end of the fourth term. Three specialized routes have been defined for this field: development, energy and environment, and digital each encompassing different courses. The development route focuses on courses related to development, especially economic development from the perspective of innovation, while the energy and environment route covers specialized courses related to sustainable development, energy, and the environment. The digital route focuses on platform economies, digital transformation, and AI revolution. The requirements of these three routes are similar to each other and do not differ in the conferred degree.

### ● Prerequisite Courses

Students are required to pass the following courses for compensation:

Principles of Economics	Principles of Economics
Science and Technology Studies	

### ● Core Courses

All students must complete these courses:

Innovation Systems: Theory and Practice	Theories of Public Policy
Economics for Policy Making	Introduction to Science and Technology Policy
Public Management and Policy Implementation	Innovation Systems

### ● Specialized Courses in the Development route

Students must take two courses:

Behavioral Sciences in Policy Making	Technology, Innovation, and Development
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### ● Specialized Courses in the Energy route

Students must take two courses:

Water and Environmental Economics and Policy	Energy and Environmental Policy
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### ● Specialized Courses in the Digital route

Students must take two courses:

Platform Governance	AI: Innovation and Society
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### ● Elective Courses

Students are required to take at least one course from the following list:

Research Methods in Policy Making	Theories of Public Policy
Energy Economics	Political Economics
Development Economics	Game Theory
Strategic Management of Technology	Technology, Innovation, and Development
Energy and Environmental Policy	Behavioral Sciences in Policy Making
Water and Environmental Economics and Policy	AI: Innovation and Society



## PhD in Management

### Admissions

Admission to Ph.D. in Management is either through talents admission route or national university entrance exam (concour) for Iranian nationals. For international students, please seek advice from the international affairs office. After initial screening, applicants are invited for an academic interview, which is crucial for Ph.D. admission. The number of students admitted to the Ph.D. is around 4 each year.

### Requirements

Students may be required to take a maximum of 2 remedial pre-requisite specialized courses depending on their previous academic background. In our Ph.D. Program, students must complete 4 core courses in the first year. At the end of the first year, students will take comprehensive exams on the topics of the first-year core modules. After passing the comprehensive exams, students progress to the research part of the degree, where they need to conduct research and publish at least one paper in a good quality English journal.

#### ● Core Courses

Remedial: based on the supervisor opinion, students must complete a maximum of 2 courses.

All PhD Students must complete the following 4 courses:

44908	Organization & Management Theories Evaluation	44927	Research Methods 1 (Quantitative)
44905	Research Methods 1 (Qualitative)	44901	Seminar (Advanced Topics)

#### Specialization Courses

	Quantitative Decision Models		Advanced Project Management
	Engineering Systems Analysis & Design	44909	Advanced Human Resource Management
	Game Theory		Technology & Innovations System
	Consumer Behavior		Corporate Growth Management
	Advanced Marketing Strategy	44933	Advanced Organization Behavior



## Ph.D. Economics

### Admissions

Admission to PhD in Economics is either through talents admission route or national university entrance exam (concour) for Iranian nationals. For international students, please seek advice from the international affairs office. After initial screening, applicants are invited for an academic interview, which is crucial for Ph.D. admission. The number of students admitted to the Ph.D. is around 4 each year.

### Requirements

Students must complete remedial pre-requisite courses depending on their background as well as the economics department's assessment. Students must also complete 3 core and 2 optional courses. The optional courses are approved by the supervisor based on the thesis topic. At the end of the first year, students sit through the comprehensive exam on the first-year core courses and econometrics topics. After passing the comprehensive exam, students progress to the research part of the program, where they need to defend their Ph.D. proposal and complete three research papers. One of these papers must be accepted by accredited English journals before the candidate can hold the viva session. The current majors offered under the Ph.D. Economics degree are Monetary Economics, Financial Economics, Public Economics, and Macroeconomics.

#### ● Core Courses

All PhD students must complete the following courses:

44773	Advanced Microeconomics I	44757	Advanced Econometrics
44774	Advanced Macroeconomics I		

#### ● Specialization Courses

44622	Advanced Macroeconomics II	44755	Asset Pricing
44779	Advanced Microeconomics II		Public Economics
	Development Economics		Selected Topics in Political Economy
	Advanced Money and Banking		PhD Research Method
	PhD Seminar		

## Courses

### Management

#### 44119: Communication & Negotiation

Negotiation is part of our daily life. We negotiate with our friends, colleagues, supervisor, customer, client, etc. Despite its presence in our life, we mostly do not know enough about how to negotiate and what to consider in our interactions. What separates those who come out of negotiations with what they want without harming their long-term relationships with those who do not? How can we know what to offer, when to concede, and when to leave the negotiation? This course aims to train students for successful negotiations through cases and role-play exercises. In a low-risk, stress-free environment, students will negotiate with one another in order to learn about basic and advanced issues in negotiations such as reservation price, package deal, when to use agents, cultural differences, dispute resolution, etc. The key textbook for this course is the following:

- Barry, Bruce, Roy Lewicki, and David Saunders. Essentials of negotiation. McGraw-Hill Higher Education, 2015.

#### 44122: Management Decision Models

This course deals with the organizational decision-making and covers three aspects of human decision-making, context-dependence and data-driven decision-making. First, a descriptive behavioral approach is adopted to shed light on “how decisions are made in the real world”. We discuss the pros and cons of different systems of thinking to uncover the roots of common decision-making mistakes. This paves the way for proposals to overcome drawbacks of human decisions to improve the wellbeing of the decision-maker as well as the organization and society. The second part of the course deals with “how decisions should be made” and elaborates on organizational contexts. This part shows how crucial challenges and leadership requirements for effective decision-making vary with context. We then discuss the essentials of the administration process that affect the quality of decisions. The last part of the course focuses on data-driven decision-making to solve organizational problems. Here we present selected quantitative techniques and discuss key issues in IoT, big data, and artificial intelligence with an influence on the roles of humans and machines in the organizational decision-making process. The main references for this course are as follows:

- Bazerman M.H. & D.A. Moore, Judgment in Managerial Decision Making. 8th edition. John Wiley & Sons Inc., 2013.
- Render, Barry, and Ralph M. Stair Jr. Quantitative Analysis for Management, 12e. Pearson Education India, 2016.
- Koehler, Derek J., and Nigel Harvey, eds. Blackwell handbook of judgment and decision making. John Wiley & Sons, 2008.

#### 44129: Venture Capital Investment

This course covers venture capital investment primarily from a VC perspective. Our focus will be on how VC firms enter and exit deals, how they source and evaluate investments, key characteristics of typical VC deals, and the way VC firms try to make their investments smart by providing their portfolio companies with a range of legal, financial, HR and recruitment assistance. While the course uses a VC lens, the content and discussions are also relevant for entrepreneurs interested in understanding the VC investment process and learning how to better leverage VC investments

to grow their start-ups. By the end of the course, students will have a good knowledge of how VC firms operate, how deals are evaluated, and how VC firms create and distribute value. The main references for this course are as follows:

- Furst, Oren, and Uri Geiger. From Concept to Wall Street. FT press, 2003.
- Aronson, Daniel H. Venture Capital: A Practical Guidebook for Business Owners, Managers and Advisors. RR Donnelley, 2011.





## 44131: Business Analytics

Business analytics refers to the ways in which enterprises can use data effectively to derive good managerial decisions. In this course, we discuss basic analytic methods and analyze case studies that successfully deployed these techniques. In the first part of the course, we focus on key statistical concepts and how to use data to develop insights and predictive capabilities using regression, logistic regression, trees, etc. In the second part, we focus on the use of optimization methods to support decision-making in the presence of a large number of alternatives and business constraints. The main references for this course are as follows:

- Bertsimas, Dimitris, K. O. Allison, and William R. Pulleyblank. *The analytics edge*. Dynamic Ideas LLC, 2016.
- Ramsey, Fred, and Daniel Schafer. *The statistical sleuth: a course in methods of data analysis*. Cengage Learning, 2012.
- Few, Stephen. "Information dashboard design." (2006).

## 44155: Managerial Economics

This course is designed for MBA students who are interested in learning about the essential concepts in economics and how they can be applied to real-world issues in the context



of business. The course emphasizes the application of key concepts from microeconomics over mathematical proofs. Students can expect to leave this course with a solid understanding of key concepts in economics and a rigorous framework to analyze novel issues faced by businesses. The topics are consumer demand, production, competition and market structure, game theory, market failures and the role of government, growth, inflation, unemployment, monetary and fiscal policies, and international economics. The main references for this course are as follows:

- Ramsey, Fred, and Daniel Schafer. *The statistical sleuth: a course in methods of data analysis*. Cengage Learning, 2012.
- Mankiw, Gregory. *Principles of economics*. Cengage Learning, 2018 (8th edition).
- Begg, David, Stanley Fischer, and Rudiger Dornbusch. *Economics*. McGraw-Hill Education, 1991.
- McKenzie, Richard B., and Dwight R. Lee. *Microeconomics for MBAs: the economic way of thinking for managers*. Cambridge University Press, 2010 (2nd edition).

## 44161: Strategic management

Strategy is about key issues for the future of organizations. Naturally, these issues concern entrepreneurs and senior managers at the top of the organization. However, middle managers need to understand the strategic direction of the organizations, both to know how to get top management support for their initiatives and to explain their organization's strategy to the people, whom they are responsible. Anybody looking for a management-track job needs to be ready to discuss strategy with their potential employer. This course takes a broad approach to strategy, looking at different schools of thought as well as lots of interesting practices. We equip managers and students of management with the concepts, frameworks, and techniques needed to make better strategic decisions. We use the ideas of prominent scholars to shape the discussion of what strategic management is. Also, we describe the practices of prominent executives and practitioners to discuss how strategic management is used in many types of organizations. The main references for this course are as follows:

- Grant, Robert M. *Contemporary strategy analysis: text and cases edition*. John

Wiley & Sons, 2016.

- De Wit, Bob, and Ron Meyer. *Strategy: process, content, context: an international perspective*. Thomson, 2004.
- Hough, J., Thompson, A. A., Strickland, A. J., & Gamble, J. E. *Crafting and executing strategy*. Berkshire: McGraw Hill, 2008.

## 44168: Organizational Behavior

The most rewarding, stressful, and probably an important aspect of organizational life is working with other people. Working with others is an "art" that requires several skills such as knowledge of influence tactics, effective communication, ability to motivate and lead, resolving conflict, being a team player and making wise decisions. This course provides an overview of the theory and research on organizational behavior concepts at the individual and group level. Through class discussions, cases, exercises and presentations this course aims to help students learn about how to "understand," "explain," "predict," and ultimately "improve" attitudes and behaviors of individuals and groups. The main references for this course are as follows:

- Robbins, Stephen P., and Timothy A. Judge. *Organizational behavior*. Pearson education limited, 2013.
- Dastmalchian, A., Javidan, M., & Alam, K. (2001). *Effective leadership and culture in Iran: An empirical study*. *Applied Psychology*, 50(4), 532-558.
- Schoorman, F. D., Mayer, R. C., & Davis, J. H. (2007). *An integrative model of organizational trust: Past, present, and future*. *Academy of Management Review*, 32(2), 344-354.

## 44169: Human Resource Management

Recruitment, development, and retention of talents are key processes in modern organizations. Most strategies may fail due to shortcomings in human resource management (HRM) practices. This course is designed for MBA students to develop their knowledge and skills for considering HRM processes in plans and management practices. The main topics are HR strategy, staffing, training, and development, performance management, career management and compensation systems. This course considers complementary relationships between HR roles of HR practitioners and general managers. From this perspective, general managers are mainly responsible for HRM while working with HRK departments. Some main HR activities of general managers, including interviewing, coaching, and rewarding are emphasized in this course. Different approaches and techniques are presented in this course in order to enable students to use HR systems effectively and participate in the development of HR systems in their future roles. A strategic view is also considered in all topics for aligning HRM with strategic directions of organizations. The main reference for this course is as follows:

- Dessler, Gary. Fundamentals of human resource management. Pearson Higher Ed, 2011.

## 44178: Strategy Implementation

A study of 275 portfolio managers reported that the ability to execute strategy was more important than the quality of the strategy itself. Most managers cited strategy implementation as the most important factor shaping management and corporate valuations. This finding seems surprising, as for the past two decades management theorists, consultants, and the business press have focused on how to devise strategies that will generate superior performance. In this class, we focus on how companies can establish strong linkages from strategy to operations so that employees' everyday operational activities will support strategic objectives. We will introduce various models of strategy execution from different scholars and compare lessons learned from them. The main focus of this class is on Kaplan Norton works of strategy execution, XPP, and we will solve different examples of strategy execution. The main references for this course are as follows:

- Kaplan, Robert S., and David P. Norton. The execution premium: Linking strategy to operations for competitive advantage. Harvard Business Press, 2008.
- Kaplan, R. S., and D. P. Norton. "The Strategy Maps: Harvard Business School Press." Boston Massachusetts (2004).
- Kaplan, Robert S., and David P. Norton. Alinhamento. Elsevier Brasil, 20

## 44224: Marketing Management

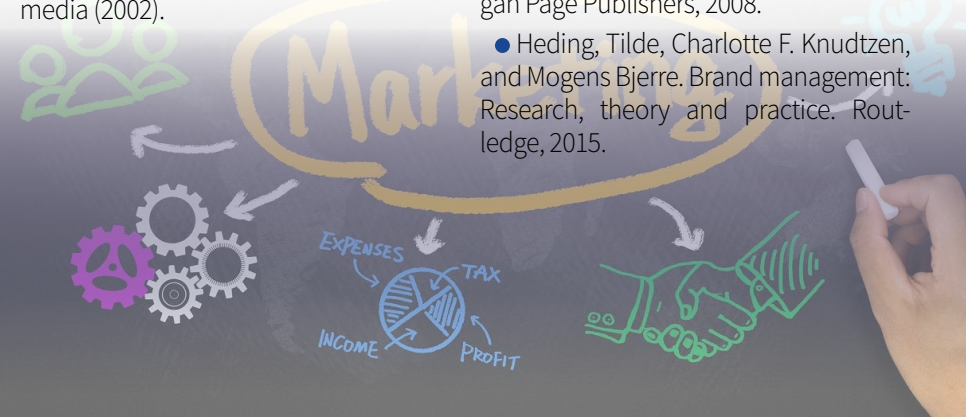
Marketing is a dynamic and an exciting field. People often confuse marketing with advertising and sales. In this course, we discuss the "real" nature and scope of marketing of which advertising and sales are simply two facets. We introduce other aspects of marketing such as marketing strategy and planning, consumer behavior, market segmentation, targeting and positioning, product and brand strategy, integrated marketing communication, marketing channels and pricing strategies. Hence, the course focuses on marketing and its role in organizations. It introduces the marketing concept and looks at techniques and frameworks used to examine marketing environments, understand consumer buying behavior, segment markets, and position products, branding, manage and promote existing products, price and place products. The main reference for this course is as follows:

- Kotler, Philip. "Marketing management, millenium edition." Jakarta: Gramedia (2002).

## 44225: Brand Management

Brand management is a fundamental element of competitive strategy and the discipline that links strategic business objectives, marketing, and operations. High-performance companies understand the importance of their brand and they actively manage brand equity. We discuss the importance of branding, what brands represent to customers, and what should be done by organizations to manage them properly in this course. We use cases and a project to expose students to the everyday challenges in brand management. Topics include assessing brand meaning, brand positioning, brand analytics, brand extensions, assessing brand strength, and building brands via media. The main references for this course are as follows:

- Keller, Kevin Lane, M. G. Parameswaran, and Isaac Jacob. Strategic brand management: Building, measuring, and managing brand equity. Pearson Education India, 2011.
- Kapferer, Jean-Noel. The new strategic brand management: Creating and sustaining brand equity long term. Kogan Page Publishers, 2008.
- Heding, Tilde, Charlotte F. Knudtzen, and Mogens Bjerre. Brand management: Research, theory and practice. Routledge, 2015.

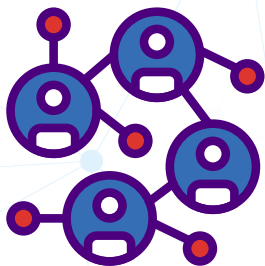




## 44226: Game Theory for Managers

Game Theory for Managers is an optional MBA course for students interested in strategy, supply chain, pricing management, corporate finance, negotiation, and policy. In many business environments, the decisions of corporations with different incentives affect each other. Game theory provides a framework for analyzing these decisions and the resulting equilibrium. In addition, game theory is an effective method to design mechanisms and desirable policies. We aim to introduce game theory concepts and diverse managerial applications in this course. The main references for this course are as follows:

- Osborne, Martin J. An introduction to game theory. Vol. 3. No. 3. New York: Oxford University Press, 2004.
- Dixit, Avinash K., and Barry Nalebuff. The art of strategy: a game theorist's guide to success in business & life. WW Norton & Company, 2008.
- McAdams, David. Game-Changer: game theory and the art of transforming strategic situations. WW Norton & Company, 2014.



## 44233: Marketing Research

Students gain an understanding of marketing research and its value in analyzing consumers, markets, and the environment in order to support better decisions throughout the company. Topics include an overview of marketing research, research process, research design (exploratory, descriptive and causal research), questionnaire design, field operation, and data analysis. In order to gain a deeper understanding of what is involved in marketing research, specific marketing research problems such as pricing, new product development, segmentation and customer loyalty analysis are covered in this course, as different marketing research problems in the company. The main references for this course are as follows:

- Churchill, Gilbert A., and Dawn Iacobucci. Marketing research: methodological foundations. New York: Dryden Press, 2006.
- Malhotra, Naresh, and David Birks. Marketing Research: an applied approach: 3rd European Edition. Pearson education, 2007.
- Rao, Vithala R. Applied conjoint analysis. New York: Springer, 2014.
- Few, Stephen. "Information dashboard design." (2006).

## 44246: Technology Transfer

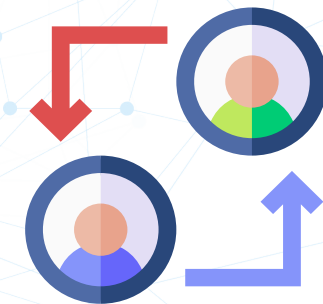
This course aims to introduce students to theoretical and practical aspects of technology transfer. We start with exploring the theoretical building blocks of why firms engage in partnerships in general and in technology arrangements in particular. The course then moves on to the more specific issues of technological capability building through technology transfer and learning. The practical aspects are covered by inviting guest speakers to share their academic knowledge in technology agreements and practical expertise in specific cases of technology transfer. This course would widely use academic papers. A selection of references used in this course are as follows:

- Lee, K. The Art of Economic Catch-Up: Barriers, Detours and Leapfrogging in Innovation Systems. Cambridge University Press, 2019.
- Hansen and Lema. The co-evolution of learning mechanisms and technological capabilities: Lessons from energy technologies in emerging economies. Technological Forecasting and Social Change, 140, 2019: 241-257.
- Bell, M. and Pavitt, K., 1995. The development of technological capabilities. In: I.U. Haque, ed. Trade, Technology and international competitiveness. Washington, DC: The World Bank, 157-211.

## 44252: Change Management

This course deals with planned organizational change, defined as a set of activities and processes designed to change individuals, groups, and organizational processes, systems, and structures. The focus of the course is on HOW to change (not WHAT to change). On the successful completion of the course, students will develop capabilities required for ongoing, long-run strategic change, become familiar with the activities and processes necessary for planned organizational change, learn how to anticipate, influence & generate change at individual, group & organizational levels, refine skills in recognizing change opportunities in organizations, and develop change agent competencies by requiring that they establish and execute plans to achieve meaningful and useful change initiatives. The main reference for this course is as follows:

- Cawsey, Tupper F., Gene Deszca, and Cynthia Ingols. Organizational change: An action-oriented toolkit. Sage Publications, 2015.







## 44464: National Innovation System

Innovation has become the main source of competitive advantage for corporations and nations. After the Second World War, a large corpus of studies emerged to decipher the secrets of innovation, either in process (such as technologies) or products. Scholars incrementally realized that the works of Joseph Schumpeter during the first half of the 20th century could provide an underlying ground, as he has constantly been emphasizing on capitalism as an engine of progress. Studies in the 1980s realized that firms do not innovate in isolation. Their innovative pattern is different, and they largely confront with uncertainty in their innovative decisions. As a result, a new multidisciplinary framework, coined “innovation system,” emerged to analyze innovation in different contexts. National Innovation System is developed to delineate the differences between countries. At a lower level Sectoral Innovation Systems try to explain the innovative behavior in each sector of the economy. Regional Innovation System is a framework for understanding the role of local factors in boosting innovation. Finally, Technological Innovation System highlights the factors that shape innovation in specific technological fields. This course aims to provide a historical background and overview of innovation studies and innovation systems. We also highlight how innova-

tion systems apply in different contexts with particular attention to three distinct national situations: advanced countries, emerging economies, and developing countries. A good deal of the course discusses the problems of Iran as a developing country. The main references for this course are as follows:

- Fagerberg, Jan, David C. Mowery, and Richard R. Nelson, eds. *The Oxford handbook of innovation*. Oxford university press, 2005.
- Louca, Iseg, et al. *As time goes by: from the industrial revolutions to the information revolution*. Oxford University Press, 2001.
- Lee, Keun. *Schumpeterian analysis of economic catch-up: Knowledge, path-creation, and the middle-income trap*. Cambridge University Press, 2013.



## 44474: Electronic Commerce

Electronic Commerce (EC) which emerged twenty-five years ago is making great impacts on our lifestyle as well as social and economic structures. Numerous virtual companies formed, and enormous traditional organizations faced digital transformation challenges. Therefore, studying EC, from business, technology and society perspectives is crucial for students interested in business administration in the contemporary world. The topics covered in this course are categorized into foundations, infrastructure and applications of EC. First, we discuss the origins of the digital revolution, electronic business models, platforms, marketing and advertising in the digital world. Then, we deal with information security and

protection, payment systems, internet of things and intelligent (smart) commerce. Finally, we bring in applications of EC, mainly from the retail sector, supply chain management, online content and media, social commerce, shared economy, and social enterprise. Case studies are used to facilitate learning from experiences obtained at local and international levels. Group projects provide students with an opportunity to focus and deepen their knowledge and understanding in their field of interest. The main references for this course are as follows:

- Turban, E., Outland, J., King, D., Lee, J. K., Liang, T. P., & Turban, D. C. *Electronic commerce: a managerial and social networks perspective*. Springer International Publishing, 2018.
- Kenneth C. Laudon, Carol Guercio Traver, *E-Commerce*, Pearson, 2017.



## 44726: Financial Econometrics for MBA

The main objective of the course is to provide students with the necessary statistical and econometric tools of financial data analysis. This course is useful for MBA students who plan to conduct empirical studies in finance for their dissertation, as well as those who would like to pursue a professional career in quantitative trading and portfolio management. The course begins with the basic concepts in econometrics and introduces the most widely used econometric technique, namely the classical linear regression. Time series models as a common tool for modeling financial data is introduced as well. The first part of the course ends with an introduction to panel data. The second part of the course focuses on the applications of these techniques in a wide range of topics in empirical corporate finance and investment. The main references for this course are as follows:

- Brooks, Chris. *Introductory econometrics for finance*. Cambridge University Press, 2019.
- Campbell, John Y., et al. *The econometrics of financial markets*. Princeton University Press, 1997.
- Reilly, Frank K., and Keith C. Brown. *Investment analysis and portfolio management*. Citic Publishing House, 2002.

## 44933: Advanced Organizational Behavior

An important aspect of management is how to manage organizational behavior. Organizations are not just technical systems, and their human and social aspects have considerable impacts on their processes and performance. Thus, understanding how individuals behave in their organizations and how their behaviors can be more productive for themselves and their organization is essential. In addition to introducing basic concepts, theories and applications of organizational behavior in another fundamental course (OB), this course is designed to cover selected advanced topics in organizational behavior of modern organizations. These topics are crucial issues in managing people in terms of both their performance and well-being. The key topics of this course are organizational commitment, advanced motivational theories including social cognitive theory, self-determination theory and goal-setting theory, organizational citizenship behavior, team dynamics and managing organizational culture. Theories and practical implications of these subjects are covered in the course. This course is specifically designed for those students who intend to pursue their profession or future studies in the fields of organizational development, human resource management or organizational behavior. The course draws on academic papers such as the following:

- Gagné, M., & Deci, E. L. (2005). Self-determination theory and work motivation. *Journal of Organizational Behavior*, 26(4), 331-362.
- Locke, E. A., & Latham, G. P. (2002). Building a practically useful theory of goal setting and task motivation: A 35-year odyssey. *American Psychologist*, 57(9), 705.
- Marks, M. A., Mathieu, J. E., & Zaccaro, S. J. (2001). A temporally based framework and taxonomy of team processes. *Academy of Management Review*, 26(3), 356-376.





# Courses

## Economics

### 44423: Development Economics

Economic development is the process of gradual improvement in material well-being of individuals. This course aims to discuss key issues in the process of economic development, enhance students' ability in applying economic models to study development problems, and discuss the relevant empirical literature with an eye toward forming policy recommendations. The course is divided into three parts: macro development, markets in developing countries, and the role of government. In the first part, we first review basic development facts and discuss various models that try to explain cross country income gaps including Solow, endogenous growth

models and poverty traps. We then discuss the relation between inequality and growth and discuss the role of institutions in shaping development outcomes. In the second part, we take a micro approach and look into the function of various markets in developing countries. These include education, health and nutrition, land and agriculture, and credit markets. In the final part of the course, we discuss the role of government in the process of development by looking into the relation between infrastructure and development, environment and development, taxation, and development, corruption, and international aid. The course relies extensively on recent empirical papers in each topic but for the explanation of theoretical concepts Ray (1998) textbook is also useful. A selection of the references for this course are as follows:

- Ray, Debraj. Development Economics. Princeton NJ: Princeton University Press, 1998.
- Caselli, F. and J Feyrer, "The Marginal Product of Capital", Quarterly Journal of Economics 122(2) 2007, pp. 535-568.
- Dinkelmann, T., "The Effects of Rural Electrification on Employment: New Evidence from South Africa", American Economic Review 101(7) 2011, pp.3078-108.

### 44616: Financial Engineering

This course covers forward contracts, futures, options, and Greeks. By the end of this course, the students will have a good knowledge of how the referred contracts work, how they are used, how they are priced by binomial and Black-Scholes-Merton model, and how they could be hedged. We start the course by an introduction to forward, futures and options and discussing their mechanics. We then discuss hedging strategies and pricing of futures and options. We discuss trading strategies with options, binomial trees, stock indices, and currencies. The main reference for this course is the following textbook:

- John Hull. Options, Futures and Other Derivatives. 9th Edition, Prentice Hall, 2015.

### 44617: Risk Management and Evaluation

This course focuses on financial risks, value at risk (VaR) and expected shortfall as the most popular risk measures, various kinds of risks, their special characteristics, and the methods for estimating, and aggregating these risks. Topics covered include interest rate risk, value at risk and expected shortfall, volatility, correlations and copulas, market risk VaR (historical simulation, model building), credit risk, and estimating default probabilities, credit VaR, scenario analysis and stress testing, operational risk, liquidity risk, model risk, and economic capital and RAROC. The main reference for this course is the following textbook:

- John Hull, Risk Management and Financial Institutions, Prentice Hall. 3rd edition, 2012.

### 44621: Research Method

In this course, students learn how to choose their research topic, find related papers, categorize them, make their research topic precise, review the literature, find their model, and verify the existence, availability, and quality of data. They will also practice writing papers and presenting talks. The main references for this course are as follows:

- Thomson, W. (2011). A Guide for the young economist. Cambridge, MA: The MIT Press.
- Miller, J. E. (2005). The Chicago guide to writing about multivariate analysis. Chicago, IL: University of Chicago Press.
- Schwabish, J. A. (2014). An economist's guide to visualizing data. Journal of Economic Perspectives, 28(1), 209-234.

## 44622: Macroeconomics II

The course is the second master level course in macroeconomics. It is centered on seven main topics: representative agent models, real business cycles, fiscal policy, monetary policy, open macroeconomics, unemployment, and advanced economic growth. By successfully finishing this course, students would be able to analyze long-run and short-run macroeconomic problems, use simple models to analyze daily macroeconomic phenomenon, write and present your macroeconomic perspective, solve standard macroeconomic mathematical problems. The main topics covered include representative agent model, calibration and estimation and log-linearization of real business cycle models, role of government, taxes, public debt (Ricardian equivalence and optimal fiscal policy), social security, monetary policy and inflation, equilibrium with money and the Cagan equations, cash in advance model and the Friedman rule, MIU model, new Keynesian models, discretion vs. rule and central bank independence, new central banking (Taylor rule and Inflation targeting), international trade and open economy, unemployment, search and match, growth models (neoclassical and endogenous growth models), political economy of growth. The main references for this course are as follows:

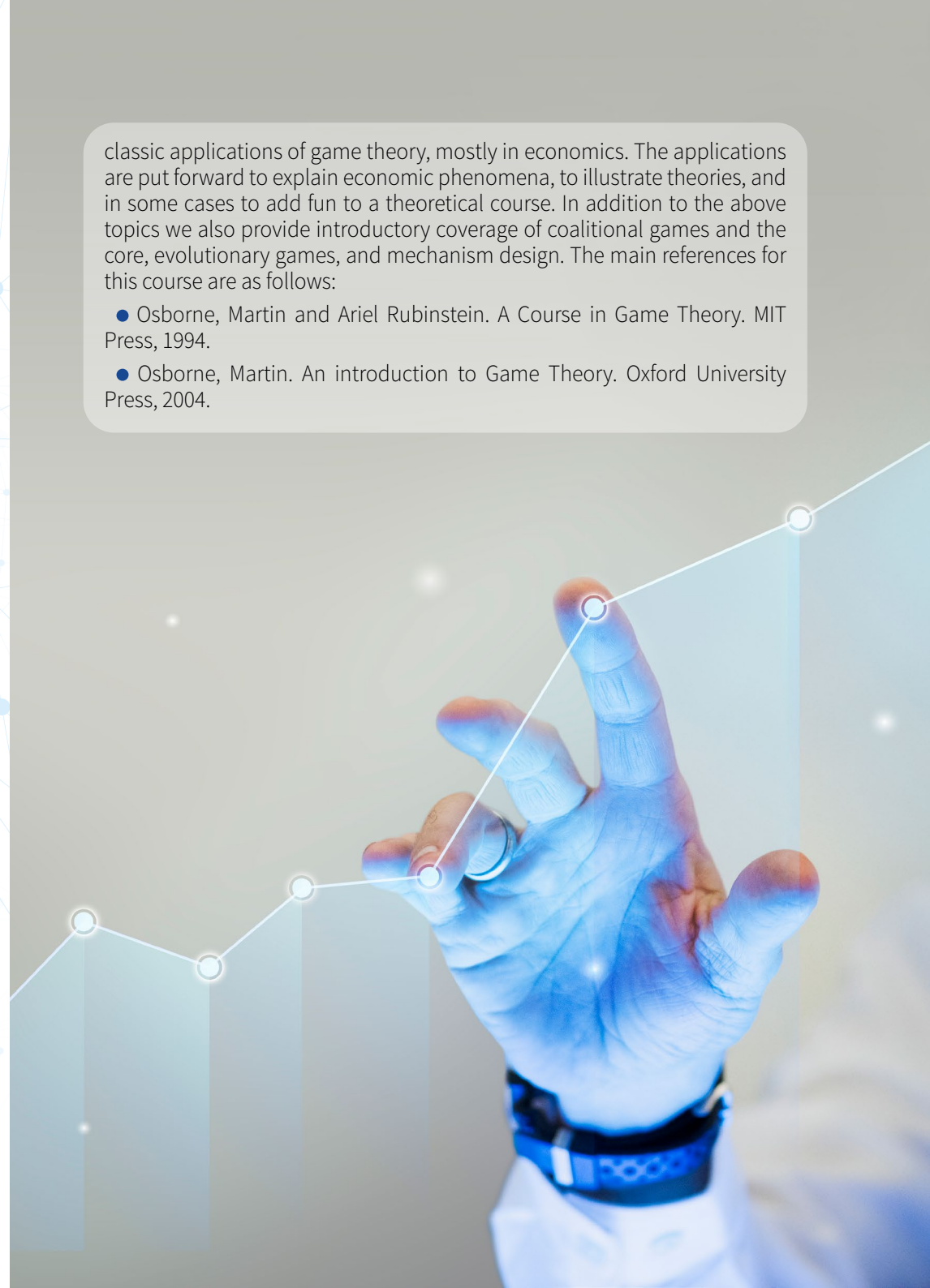
- Romer, David. Advanced macroeconomics. 3rd edition, McGraw-Hill, 2006.
- Walsh, Carl E. Monetary Theory and Policy. The MIT Press, 2010.
- Acemoglu, Daron. Introduction to Modern Growth Theory. Princeton University Press, 2009.

## 44625: Game Theory

Game Theory is the name for a collection of analytic tools which economists use to understand strategic interactions. The aim of this course is to analyze strategic behavior of rational decision-makers. We say that decision making is strategic if it involves taking into account what other agents want, know, believe, and do. Strategic behavior is an important component in interactions such as market competition between firms, bilateral bargaining, auctions, voting, and information transmission. In this course we cover strategic-form games with complete information, strategic-form games with incomplete information, dynamic games, and equilibrium concepts for analyzing these games. The focus of the course is on three equally important fronts: First, the students should get a good understanding (and some experience) of how to model a strategic environment as a game. Second, the students learn how to solve a game-theoretic model. Third, the course contains an overview of some

classic applications of game theory, mostly in economics. The applications are put forward to explain economic phenomena, to illustrate theories, and in some cases to add fun to a theoretical course. In addition to the above topics we also provide introductory coverage of coalitional games and the core, evolutionary games, and mechanism design. The main references for this course are as follows:

- Osborne, Martin and Ariel Rubinstein. A Course in Game Theory. MIT Press, 1994.
- Osborne, Martin. An introduction to Game Theory. Oxford University Press, 2004.





## 44626: Quantitative Economics

This advanced course is designed to familiarize second-year Ph.D. students with quantitative, computational and numerical methods used in both micro and macroeconomics. The course aims to ultimately help students develop their own research idea along this course. The topics covered are an introduction to Python programming, introduction to structural estimation, including behavioral models of binary choice, simulation and numerical maximization, simulation-assisted estimation, and economic models with heterogeneous agents (dynamic programming, calibration and estimation). The main references for this course are as follows:

- Cameron, A. Colin, and Pravin K. Trivedi. Microeconometrics: methods and applications. Cambridge university press, 2005.
- Train, Kenneth E. Discrete choice methods with simulation. Cambridge university press, 2009.
- Sargent, Thomas J., and John Stachurski, Quantitative Economics with Python, Online lecture notes (<https://python.quantecon.org/>), 2020.

## 44706: Microeconomics II

Microeconomics intends to analyze the behavior of individual economic agents and their interactions under different institutional arrangements. In Microeconomics II, we first introduce decision making under uncertainty. We then introduce game theory as a way of modeling strategic interactions between economic agents. This will pave the way for the departures from competitive market that we discuss in the rest of the course. These include externalities, public goods, models with non-price taker producers, and presence of asymmetric information (adverse selection, signaling, and screening and the principles-agent problem). The emphasis of this course is theoretical, but we discuss real-life examples when necessary. The main references for this course are as follows:

- Varian, Hal R., Microeconomic Analysis, W. W. Norton and Company Inc. 1992.
- Mas-Colell, A., Whinston, M. D., and J. R. Green, Microeconomic Theory, Oxford University Press, 1995.
- Jehle, Geoffrey A. and Philip J. Reny. Advanced Microeconomic Theory. Prentice Hall. 2011.

## 44710: Macroeconomics I

The course is the first course in Intermediate Macroeconomics. It is centered on five main topics: general equilibrium, economic growth, monetary economics, short-term macroeconomic analysis and open economy. Topics covered include general equilibrium and the Edgeworth box, the real economy, Robinson Crusoe economy, intertemporal decisions, consumption theory, Solow model, neoclassical growth model, monetary economics and short term macroeconomic analysis, quantity theory of money, Baumol-Tobin money demand model, review of IS/LM and AD/AS Models, adaptive expectations and the Fisher model, rational expectations and the Lucas islands, Lucas critique, Cagan equation and the equilibrium model, cash-in-advance model, and the Friedman Rule, open economy and exchange rates, PPP and Interest-rate-parity, Mundell-Fleming, international finance trilemma, and the Ricardian trade model. The main references for this course are as follows:

- Barro, Robert. J. Intermediate Macro. Cengage Learning, 2009.

- Romer, D. Advanced Macroeconomics, McGraw Hill, 2006.
- Blanchard, Olivier and Stanley Fisher. Lectures on Macroeconomics, The MIT Press, 1989.

## 44712: Mathematical Economics

In this course, students learn the mathematics needed in Micro and Macro Economics. They will learn about different kinds of static optimization problems, existence, and uniqueness results for their solutions, and Kuhn-Tucker and Lagrange conditions. They will also work with systems of linear differential equations, their phase diagrams, and their equilibria. The final section of this course is devoted to dynamic optimization. The main references for this course are as follows:

- Cass. Nonlinear Programming in Finite-Dimensional (Euclidean) Spaces, Lecture Notes (Math Camp 2005), University of Pennsylvania, Department of Economics.
- Perko, L. Differential Equations and Dynamical Systems, Springer Verlag, 1996.



## 44714: Principles of Economics

This is an introductory course in economics covering both macro and microeconomics concepts. The course is divided into four parts. The first part covers an introduction by looking at what is Economics, how economists think, gains from trade. The second part covers basic concepts in microeconomics such as demand, supply, market equilibrium, market failures and the role of government. The third part covers the foundation of macroeconomics by looking at growth models, macroeconomic models, money, inflation, and unemployment, and open economy issues. The final part looks at the economic analysis of social systems. The main textbooks used in this course are as follows:

- Mankiw, Greg. Principles of Economics. Cengage Learning, 2018.
- Nili, Masood. Principles of Economics. Ney Publishing, 1386 (Farsi).

## 44715: Microeconomics I

Microeconomics analyzes the behavior of individual economic agents and their interactions under different institutional arrangements. Microeconomics I aims to develop an understanding of how rational individuals choose their consumption and how profit-maximizing firms decide their production plans. Having studied the single-agent decision problem, Microeconomics I moves to the anonymous interaction of economic agents in the competitive markets. The general equilibrium model and the special but important case of partial equilibrium model serve this purpose. Microeconomics I discusses the foundations of market equilibria and its welfare properties. The main references for this course are the following textbooks:

- Varian, Hal R., Microeconomic Analysis, W. W. Norton and Company Inc. 1992.
- Mas-Colell, A., Whinston, M. D., and J. R. Green, Microeconomic Theory, Oxford University Press, 1995.

## 44709: Econometrics II

This course is designed to provide students with the recently developed methods in time series econometrics, theoretical tools and practical experience necessary to do applied econometric research. Econometrics I is the prerequisite for the course. However, it is assumed that students are familiar with a basic knowledge of calculus and matrix algebra. A reasonable proficiency in econometric software is needed and students will be actively involved with computer exercises in the classes using an econometrics program. The topics covered are univariate stationary processes, Granger causality, vector autoregressive processes, nonstationary processes, cointegration, and autoregressive conditional heteroskedasticity. The main references for this course are as follows:

- Kirchgassner, G., Wolters J. and U. Hassler, Introduction to Modern Time Series Analysis, Springer Science & Business Media, 2013.
- Hamilton, J. D. Time Series Analysis, Princeton University Press, Princeton 1994.

## 44713: Economy of Iran

This course reviews the capacities of the Iranian economy and assesses its performance based on common economic indicators. We examine the observed gap between capacity and performance and discuss potential explanations. These provide an explanation for the persistence of major failures, such as low and volatile economic growth, two-digit unemployment rate, and high inflation rate. We review the microeconomic foundations of macroeconomic performance of Iran, based on the behavior of the main economic actors, including households, enterprises, banks, government and central bank, and the foreign sector of the Iranian economy. After analyzing the behavior of economic actors, once again, the problems of the economy will be reconsidered, and this time, based on this analysis, we will understand the reasons for the existing gaps and persistence of major failures. At the final stage of the course, we will pursue the root causes of the problems in the political economy of Iran, and we will show that the existing imbalances are all a reflection of an equilibrium in the political economy of Iran. The following Farsi textbooks are used for this course along with an up-to-date analysis of Iran's Economy.

## 44716: Econometrics I

Econometrics is the art of interpreting the data with the aim of testing economic theories and hypotheses. In this course, we introduce the basics of statistical reasoning and provide an in-depth analysis of linear regression model. We discuss the difficulties of establishing causality and other problems with regression methods. The course will introduce students to the basics of empirical modeling and methods of estimation. The topics covered in this course are a review of probability and statistics, simple and multiple regression models (estimation and inference), specification problems and heteroskedasticity, instrumental variables approach, difference-in-differences estimation, and an introduction to times series and panel data models. The main references for this course are as follows:

- Wooldridge, J., Introductory Econometrics: A Modern Approach, South-Western, Cengage Learning, 2013.
- Stock, J. H. and M. W. Watson, Introduction to Econometrics, Pearson Education, 2011.
- Greene, William H. Econometric Analysis. Pearson Higher Ed, 2014.

## 44726: Econometrics of Financial Time Series

This course reviews time-series techniques and their application to the analysis and forecasting of financial time-series data. Emphasis is given to methods applied to financial data. Topics covered include ARIMA models, GARCH models, analysis of random walks, stochastic trends, and volatility models. We also cover the concept of stationarity, unit root tests, and cointegration and error correction models. The main references for this course are as follows:

- Mills T.C., The Econometric Modeling of Financial Time Series. 2nd edition, Cambridge University Press, 1999.
- Hamilton, J.D., Time Series Analysis. Princeton University Press, 1994.
- Keshavarz Haddad, G., Econometrics of Financial Time Series, Ney Publishing (2015). Farsi textbook.

## 44721: Financial Economics I

This course provides a rigorous treatment of the core concepts of investments. It broadly covers major asset theories, tools, and results in portfolio choice and asset pricing. Specifically, we cover risk aversion and capital allocation to risky assets, optimal risky portfolios, index models, the capital asset pricing model, arbitrage pricing theory and multifactor models of risk and return, the efficient market hypothesis, behavioral finance and technical analysis, and the empirical evidence on security returns. The main references for this course are as follows:

- Bodie, Kane and Marcus, Investments, McGraw Hill, 2009.
- Fama, Eugene F. and Kenneth R. French, 1993, Common risk factors in the returns on bonds and stocks, Journal of Financial Economics 33, 3–53.
- Ross, Stephen A., 1976, the arbitrage theory of capital asset pricing, Journal of Economic Theory 13, 341–360.

## 44722: Financial Economics II

This course focuses on Corporate Finance. Upon completion of this course, students will understand what finance is, how financial system works, and become familiar with the various aspects of the financial structure of firms. Topics covered include an introduction to finance, financial markets and institutions, allocating resources over time, the analysis of investment projects, principles of market valuation, valuation of common stocks, risk and risk management techniques, financial structure of a firm, and financing and valuation. The main references for this course are as follows:

- Bodie and Merton, Financial Economics. Prentice Hall, 2009.
- Brealey, Richard A., Stewart C. Myers, Franklin Allen, and Pitabas Mohanty. Principles of Corporate Finance. 11th edition, McGraw-Hill Education, 2012.



## 44731: Applied Econometrics

This course provides a comprehensive treatment of topics in microeconometrics, the analysis of individual-level data on the economic behavior of individuals or firms using regression methods for cross-sectional and panel data. The course has a practical flavor. A basic understanding of the linear regression model with matrix algebra is assumed. The course makes frequent use of numerical examples based on generated data to illustrate the key models and methods. The topics covered are descriptive statistics and linear regression, endogeneity, linear regression with panel data, quantile regression and bootstrapping, Bayesian analysis, nonlinear models, sample selection in nonlinear models, random parameter and hierarchical linear models, latent class models, censoring and truncation, duration models. The main references for this course are as follows:

- Keshavarz Haddad, G., *Econometrics of Micro Data and Policy Evaluation*, Ney Publishing (2014). Farsi textbook.
- Lalonde, R.J. "Evaluating the Econometric Evaluations of Training Programs with Experimental Data." *American Economic Review*, vol. 76, 1986, 604-620.



- Dehejia, R. and S. Wahba, "Causal Effects in Non-Experimental Studies: Re-Evaluating the Evaluation of Training Programs," *Journal of the American Statistical Association*, Vol. 94, December 1999, 1053-1062.

## 44733: An Introduction to Economic Growth

This course intends to discuss growth facts and introduce models of economic growth that try to explain those facts. The topics covered in this course are growth facts, physical capital, population, human capital, measuring productivity, technology, efficiency, open economy, government, culture, and growth in Iran. The main reference for this course is the following textbook:

- Weil, David N. *Economic Growth*. 3rd ed., Pearson Higher Ed., 2013.

## 44742: Market Design

This course studies topics in market design (auctions and two-sided matching) focusing on the incentives created by market rules and the efficiency of outcomes. Graduate students in Economics, Mathematics, Computer Science, Computer Engineering and related areas are welcomed. Advanced undergraduate students may take the course with permission from the instructors. Topics covered are an overview of market design, classic market failures in market design, Bayesian games, auctions (theory and practice), double auction, basic theory of two-sided matching, mechanism design aspects of matching, random assignment problems, and applications of market design. The main references for this course are as follows:

- Krishna, Vijay. *Auction theory*. Academic press, 2009.
- Roth, Alvin E. and Marilda A. O. Sotomayor (1990), *Two-Sided Matching: A Study in Game-Theoretic Modeling and Analysis*, Cambridge University Press.

## 44722: Financial Economics II

Energy economics is a growing field in economics. The availability of new data sources and the interest of policy

makers make this field an interesting topic for research. Moreover, many serious challenges in Iran are rooted in energy policies. The country wastes about 20% of its GDP every year for energy subsidies and, at the same time, lacks enough resources to spend on infrastructure, health and education. Additionally, about half of government income is funded by oil revenues in which it seems that the government has no strategic plan for its development. Recently, the dominance of the petrochemical industry has changed the manufacturing sector and political lobbies. This course has an empirical focus relying on advanced econometrics methods. The assignments are based on real data and replication of recent papers in top journals. The topics covered are the hotelling model, ordering of extraction, drilling economy, natural gas, electricity market and competition, gasoline market, pollution and health, environment, regulation, welfare, water, health and regulation, and agriculture and climate change. The course relies extensively on academic papers. A selection of these papers is as follows:

- Brehm, Paul A., and Eric Lewis. "To Trade or Not to Trade: Oil Leases, Information Asymmetry, and Coase." (2016).
- Springel, Katalin, "Network Externalities and Subsidy Structure in Two-Sided Markets: Evidence from Electric Vehicle Incentives", (2016).



## 44747: Public Economics

Public economics studies the public sector in its broadest sense. The aims of this course are to: discuss key issues in public economics, provide an overview of the theoretical tools and empirical strategies used in the study of the public sector, and develop a coherent understanding of practical issues in the implementation of public sector policies. Students successfully completing this course should be able to critically discuss key issues in public economics, understand the basic economic modeling of the public sector, and engage critically with the empirical public economics literature. The topics covered are split into three parts. In the first part, the theoretical and empirical works in the literature of optimal tax and redistribution are reviewed. In the second part we cover social insurance by looking at unemployment insurance, health insurance, and social security and pensions. In the final part of the course, we discuss externalities and public goods. The course relies heavily on academic papers. A selection of the references used are as follows:

- A. Atkinson and J. Stiglitz. Lectures on Public Economics, New York: McGraw Hill, 1980.

- Auerbach, A. J. and M. Feldstein (eds.), Handbook of Public Economics, vol. 1 (1985), vol. 2 (1987), vol. 3 (2002), vol. 4 (2002) Elsevier, Amsterdam.

- Auerbach, A. J., Chetty, R., Feldstein, M., & Saez, E. (Eds.). (2013). Handbook of public economics (Vol. 5). Newnes.

## 44772: Industrial Organization

This course introduces students to essential topics in industrial organization. Students should acquire a thorough understanding of topics such as oligopoly, collusion, product differentiation, entry and exit, vertical relationships, price discrimination, bundling, innovation, networks, and regulation and competition policy. The list is rather long; however, some topics will be discussed in detail while others are treated more briefly. Students are expected to know some of the basic ideas, e.g., the core concepts from game theory and static models for oligopoly. The course covers both theoretical and empirical issues. The main references for this course are as follows:

- Pepall, Richards & Norman. Industrial Organization: Contemporary Theory and Practice. John Wiley & Sons Inc., 2012.

- Shy, Oz; Industrial Organization: Theory and Applications; MIT Press, 1995.

- Tirole, Jean. The Theory of Industrial Organization. MIT Press, 1988.

## 44771: Selected Topics in Public Choice and Political Economics

The purpose of this course is to familiarize students with the main topics in public choice and political economics. The course also covers topics in the political economy of oil-exporting countries and sanctions. In the beginning, students learn the fundamentals of public choice and political economics. The main theories in voting rules, politicians' and voters' decisions, and election outcomes are discussed next. After that, the course reviews the main characteristics of specific political regimes, interest groups, lobbying, campaigning, and bureaucracy. In the end, the political economy of the oil-exporting countries and political economy of sanctions are discussed. The main references for this course are as follows:

- Persson, T., and G. Tabellini. Political Economics: Explaining Economic Policy. Cambridge MA: MIT Press, 2002.

- Mueller, D. Public Choice III. Cambridge University Press, 2003.

## 44736: Oil and gas finance

This course commences with an industry overview and group work on qualitative and quantitative risk

analysis. This is designed to ensure that all participants have a good working understanding of the basic structure of the international petroleum industry, qualitative risk “template” applied by lenders (what risks are “bankable”), different risk/reward objectives of sponsors and lenders, and ratios and other tools used to determine loan values and balance equity and debt. The course will then progress to a study of a project financing challenges in different branches of the industry, including upstream field development, refineries, oil and gas transportation pipelines and gas gathering systems, liquefied natural gas (LNG) liquefaction and regasification petrochemical plants, gas-to-liquids, and gas storage. A collection Farsi and English references are used in this course. A selection of these references are as follows:

- Simkins, Betty, and Russell Simkins. Energy finance and economics: Analysis and valuation, risk management, and the future of energy. Vol. 606. John Wiley & Sons, 2013.

- Allen F, Seba R (1993): Economics of Worldwide Petroleum Production Tulsa: OGCI Publications Campbell Jr., J.M.; Campbell Sr., J.M.;

- Campbell, R.A. (2007): Analyzing and Managing Risky Investments, Norman: John M. Campbell.

## 44622: Special Topics in Macroeconomics

The course is the third course in Macroeconomics at master level. It is centered on three main topics: monetary economic, international trade and unemployment. We discuss theories about money the relation between real and nominal economy, central banking, open economy issues, and models of the labor market. The main references for this course are as follows:

- Barro, Robert. J. Intermediate Macro. Cengage Learning, 2009.
- Mishkin, Frederic S. The Economics of Money, Banking, and Financial Markets. Pearson, 2016.
- Pissaridies, Christopher A., Equilibrium Unemployment Theory. The MIT Press, 2000.

## 44 622: Advanced Macroeconomics II

The course is the Second PhD-Level course in Macroeconomics. It is centered on four main topics: dynamic macroeconomic analysis, monetary economics, optimal taxation, and financial macroeconomics. This course is more technical rather than conceptual. You learn classic papers and typical techniques used in mac-

roeconomic modeling. We start with a review of real business cycle models. We discuss models of money, optimal taxation, and financial macro (investment, incomplete financial markets, and overlapping generations model). The main references for this course are as follows:

- Galí, Jordi. Monetary policy, inflation, and the business cycle: an introduction to the new Keynesian framework, manuscript, 2008.
- Walsh, Carl E. Monetary Theory and Policy. The MIT Press, 2010.
- Lars Lundquist and Thomas Sargent, Recursive Macroeconomic Theory, Cambridge, Mass.: MIT Press, 2000.

## 44725: International Trade

By the end of this course, students should be able to understand why international trade has welfare gains, what are its distributional effects, how it affects labor markets, what optimal trade policies are, and finally, what is the political economy behind international trade. Specifically, we cover the gravity model, comparative advantage (Ricardian, DFS & EK models), endowments comparative advantage (Heckscher Ohlin), tastes (Armington model), increasing returns (Krugman model), firm

heterogeneity (Melitz and Chaney Models), growth and trade, trade policy and political economy of trade, inequality and trade, and unemployment and trade. The main references for this course are as follows:

- Feenstra, Robert C. Advanced International Trade: Theory and Evidence. Princeton University Press, 2003.
- Helpman, Elhanan, and Paul Krugman. Trade Policy and Market Structure. MIT Press, 1989. ISBN: 9780262580984
- Krugman, Paul, Maurice Obstfeld, and Marc Melitz. International Economics: Theory and Policy. 9th ed. Addison-Wesley, 2011.

## 44773: Advanced Microeconomics I

The aim of this course is to familiarize students with some of the core concepts of microeconomics that are needed to pursue graduate research in economics. The topics covered include general equilibrium and welfare, equilibrium and time, equilibrium under uncertainty, and social choice theory. The main reference for this course is as follows:

- Mas-Colell, A., Whinston, M. D., and J. R. Green. Microeconomic Theory. Oxford University Press, 1995.





## 44774: Advanced Macroeconomics I

This course provides a Ph.D. level training in macroeconomics by covering key tools of analysis and models in macroeconomics. Topics covered include dynamic optimization, overlapping generations model, real business cycles, asset market, labor market, money search, recursive commitment problem, international macroeconomics. The main references for this course are as follows:

- Per Krusell, Lecture notes for Macroeconomics I, 2004.
- Jerome Adda and Russell Cooper, Dynamic economics: quantitative methods and applications. MIT Press, 2003.
- Lars Lundquist and Thomas Sargent, Recursive Macroeconomic Theory, Cambridge, Mass.: MIT Press, 2000.

## 44 772: Advanced Microeconomics II

Microeconomics intends to analyze the behavior of individual economic agents and their interactions under different institutional arrangements. In this course we discuss a few topics in game theory, contract theory, and market design. First, we give a quick overview of basic

game theory definitions and equilibrium concepts. Games of complete information might be a start to modeling strategic interactions, but in order to make our models more realistic, we need to step into the world of incomplete information games (Bayesian games). Here we first consider auctions. Then we consider the more general problem of designing mechanisms that could convince agents to do what the designer wants. Our exploration into mechanism design is not very deep, and we only discuss the key concepts such as the revelation principle and VCG mechanisms. An important category of incomplete information games is the signaling games. We review a few examples of signaling games and discuss solution concepts and refinements. For the last part of this course, we cover a few topics in contract theory, such as the basic principal-agent model and its extensions to multi-party contracting environments like menu auctions. The main references for this course are as follows:

- Mas-Colell, A., Whinston, M. D., and J. R. Green. Microeconomic Theory. Oxford University Press, 1995.
- Jehle, Geoffrey A. and Philip J. Reny. Advanced Microeconomic Theory. Prentice Hall. 2011.
- Bernheim, Douglas B. and Michael D. Whinston, "Menu Auctions, Resource Allocation, and Economic Influence", Quarterly Journal of Economics 101(1) 1986, pp. 1-32.





## Courses

### Policy

#### 44505: Innovative Systems

Multiple studies in the past have shown that technological changes and development are not merely technical or engineering issues. They require extensive changes in various other aspects such as attitudes, institutions, laws, regulations, and even the way organizations and enterprises are managed. Solely focusing on the enterprise and its internal mechanisms without considering its surrounding environment leads to erroneous analyses of the successes and failures of these enterprises. This surrounding environment encompasses broad external factors ranging from overall economic and political conditions to government regulations and policies, and includes the roles of other entities and actors such as universities, institutions, and even industries. Therefore, a successful enterprise not only needs sufficient self-awareness but also requires a thorough and deep analysis of its surrounding environment to ensure innovation, competitiveness, and subsequently, profitability by making appropriate decisions.

This course examines and analyzes this complex system within the framework of an innovation system at four levels: the national innovation system, sectoral innovation system, regional innovation system, and technological innovation system. These systems provide the conditions and mechanisms for the growth and innovation of enterprises, emphasizing the significant interaction between an enterprise and its surrounding environment.

The innovation system approach also provides a platform to elucidate the reasons for the advancement or lagging behind of certain countries, considering the role of enterprises at the heart of this system, and explaining the role and impact of various factors and actors within this context. The primary sources for this course are as follows:

- Oxford Handbook of Innovation, Edited by Jan Fagerberg, Richard Nelson and David Mowery, 2005, Oxford, Oxford University Press.
- Chaminade, C., Lundvall, B-Å. & Haeneef, S (2018). Advanced Introduction to National Innovation Systems. Edward Elgar Publishing.
- Cecilia Rikap & Bengt-Åke Lundvall (2021), The Digital Innovation Race: Conceptualizing the Emerging New World Order, Palgrave Macmillan.
- Freeman C. And Louca F., 2001. As time goes by, Ch. 5, Oxford, Oxford University Press.
- Lundvall, A. B. Vang J. Joseph K. J. and Chaminade C. 2009. Handbook of innovation systems and developing countries: building domestic capabilities in global

setting, E.E. Publishing, U.K.

- Edquist C. 1997. Systems of Innovations: Technologies, institutions and organizations, Printer
- Nelson R. 1993. National innovation systems: a comparative analysis, Oxford University Press

#### 44512: Economics for Policy Making

The questions addressed in this course are as follows:

- How does inflation emerge and how is it controlled?
- What factors drive people's motivation to invest, and what prompts them towards capital outflow or retaining personal assets?
- Why do people in certain countries, like ours, prefer purchasing foreign goods rather than embracing domestic products?
- Politicians urge people to conserve resources like water, electricity, and other forms of energy. Why do people demonstrate vastly different consumption behaviors in these cases?
- Politicians prefer to keep exchange

rates low and stable. Therefore, when the exchange rate fluctuates beyond their intended range, it becomes puzzling for them. In many instances, decision-makers spend considerable time making decisions that either have low effectiveness or even have adverse effects.

The primary resources for this course are:

- Book: "Iranian Economy: Overcoming Challenges" by Masoud Nili and colleagues, 1397 (2018), Institute for Management and Planning Studies Publications.
- Book: "Iranian Economy: Challenges and Approaches to Achieving Sustainable Growth and Employment" by Masoud Nili and Hamid Kardeh Bacheh, Institute for Management and Planning Studies Publications, 1390 (2011).

## 44515: Policy-making and Environmental Economics

Industrial, agricultural, and urban development worldwide in recent decades has placed increasing pressure on water and environmental resources. Inadequate, unsystematic policies, lack of coordination, and insufficient attention to economic, social, human behavioral, and managerial aspects have exacerbated this pressure. Additionally, existing uncertainties and delays in decision-making, coupled with climate changes, have compounded this problem. Consequently, achieving global sustainable development is a highly significant and complex international concern. In pursuit of this goal, major universities have established departments and centers for policy-making and environmental economics.

In Iran, environmental and water issues pose a critical challenge, interlinked with other major challenges. Therefore, addressing environmental issues, particularly water resource management, is not merely a technical problem. Its resolution is contingent upon various actions, including legislative reforms, tariffs, subsidies, and

taxes by the government, along with altering consumption patterns, accepting resource scarcity, and civil responsibility among other actions by the public. Hence, for sustainable policy-making and management of water and the environment, policies must be scientifically sound, creative, acceptable, resilient, transparent, and executable.

These policies should be formulated through an internal mechanism of dialogue among real stakeholders, aiming to achieve a mutual understanding of the problem, rational and fair solutions, and a consensus on problem-solving approaches while acknowledging the vulnerabilities of previous solutions. In recent years, attention to water and environmental issues has been among the top priorities in the country's top-level documents, becoming significantly crucial for developing practical knowledge in the country's policy-making. To achieve this objective, training talented and interested human resources capable of interdisciplinary thinking in water and environmental policy-making is essential. Despite industrial universities' excellence in technical and engineering fields, they have not invested as much as necessary in this critical subject. The main resources for this course are as follows:



- Griffin, R.C., 2006. Water Resources Economics, MIT Press.
- Islam S, Susskind L. 2013. Water Diplomacy: A Negotiated Approach to Managing Complex Water Networks. RFF, Press, New York.
- Jørgensen S.E., Marques J.C., Nielsen S.N., 2015. Integrated Environmental Management: A Transdisciplinary Approach, CRC Press.
- Krishna I.V.M., Manickam V., 2017. Environmental Management, Elsevier.
- Loucks, D.P. and van Beek E., 2017. Water Resources Systems Planning and Management - an Introduction to Methods, Models and Applications, Springer.
- Ostrom E., Governing the Commons, Cambridge Press 1990.

## 42388: Science and Technology Studies

The main objective of this course is to familiarize students with the fundamental concepts discussed in Science and

Technology Studies. After completing this course, students should be able to comprehend the analyses presented regarding the relationship between science, technology, and society and actively contribute to formulating such analyses. It is hoped that by taking this course, and after becoming acquainted with the primary references in this field and having a proper understanding of the research methodologies employed, students will be capable of executing research projects in this domain by correctly applying qualitative and quantitative research methods. The main resources for this course are as follows:

- Achterhuis, H. (Ed.). (2001). American philosophy of technology: The empirical turn. Indiana University Press.
- Brey, P. (2010). Philosophy of technology after the empirical turn. *Techné: Research in Philosophy and Technology*, 14(1), 36-48.
- Bucchi, M. (2004). Science in society. Nova lorque: Routledge.
- Chalmers, A. F. (1990). Science and its fabrication. Open University Press.
- Chalmers, A. F. (2013). What is this thing called science?. Hackett Publishing.



## Theories of Public Policy

The educational objectives of this course include:

- Familiarity with and the ability to explain the theories prevalent in the field of public policy.
- Understanding the social, political, economic, and technical environments relevant to policymaking.
- Comparing traditional methods of policy analysis with a political approach for analyzing public policies.
- Recognizing effective evidence, ineffective elements, and rhetorical claims in the policymaking process.
- Providing a concise and non-technical explanation of the dimensions of the policymaking process that is understandable and useful for employees and managers in achieving their organizational goals.

The main resources for this course are as follows:

- Cairney, Paul, & Weible, Christopher. (2017). The new policy sciences: combining the cognitive science of choice, multiple theories of context, and basic and applied analysis. *Policy Sci.* No. 50. PP:619-627.
- Smith, Kevin B., & Larimer,



Christopher W. (2009) *The Public Policy Theory Primer*. Westview Press. Chapter 1

- John, Peter. (2012). *Analyzing Public Policy*. (2nd Edition). Routledge. Chapter 1
- Goyal, Nihit. (2017). A “review” of policy sciences: bibliometric analysis of authors, references, and topics during 1970–2017. *Policy Sci.* No. 50. PP: 527-537.
- Weible, Chris. (2018) *A New Policy Sciences*. International winter school on public policy .Autrans. France.

## Energy and Environmental Policy

With the advancement of human civilization, concerns regarding access to natural resources, including sustainable energy while preserving environmental balance, have increased. Naturally, for decades, economics (as the science of meeting unlimited needs from limited resources) has addressed these concerns. Despite the relatively detailed history, not only has the prominence of this field not diminished today, but due to global and growing challenges such

as global warming and the reduction of fossil energy reserves, policymakers are increasingly inclined toward this knowledge.

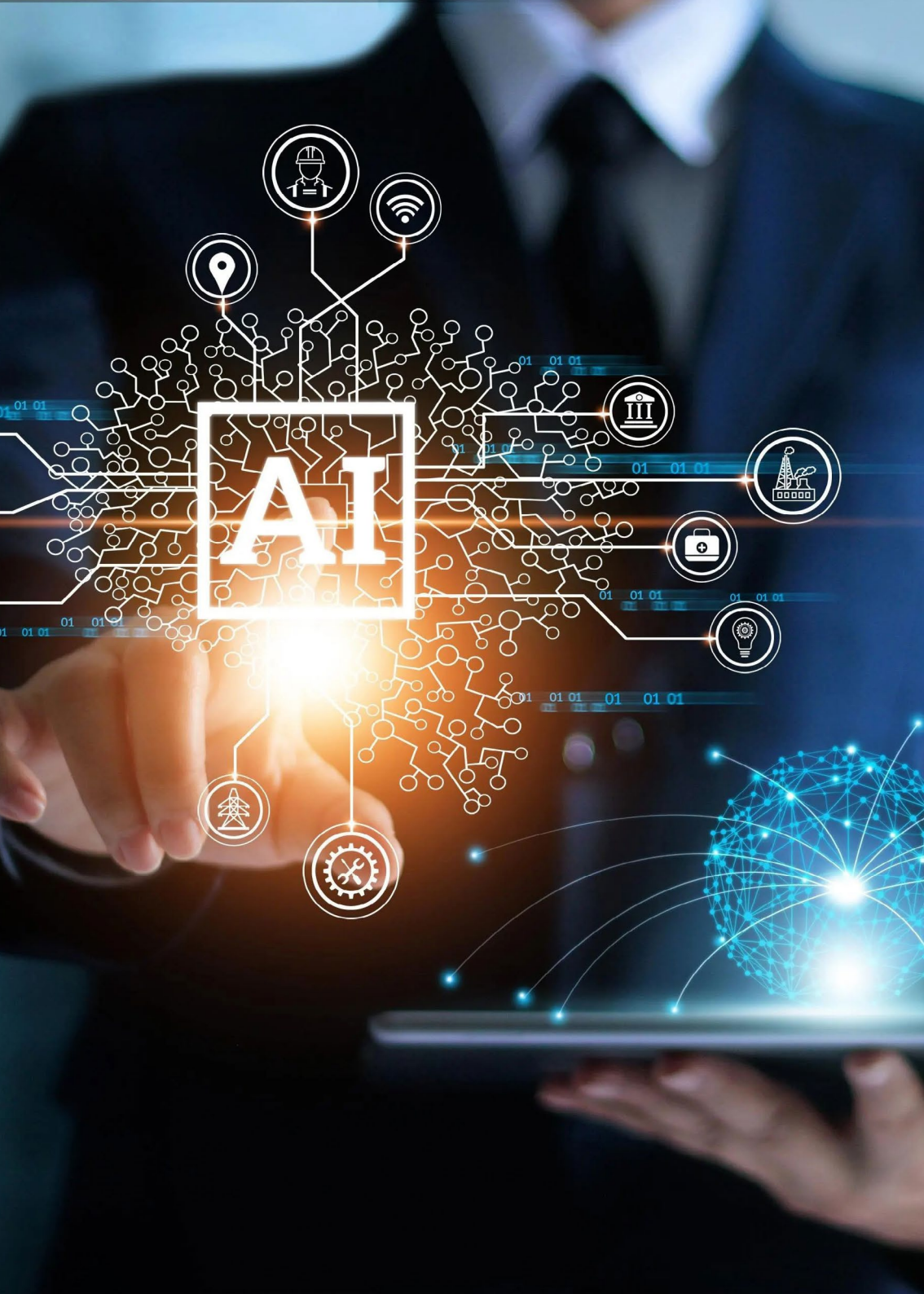
The overall goal of this course is to introduce and assess economic concepts related to the following areas:

- Methods of regulating energy markets
- Native and global challenges in natural resource extraction and environmental concerns
- Efficiency of energy and environmental markets
- Political economy of resource distribution and environmental costs

The primary resources for this course are as follows:

- Tietenberg & Lewis. *Environmental and Natural Resource Economics*, 10th edition
- Baumol, William J. and Wallace E. Oates. 1988. *The Theory of Environmental Policy*. New York: Cambridge University Press.
- Anderson, S.T., R. Kellogg, and S. Salant. 2014. *Hotelling Under Pressure*. NBER Working Paper 20280.
- David Armstrong, Lorna Lloyd & John Redmond, *International Organisation in World Politics*, 3rd edition (Basingstoke: Palgrave/Macmillan, 2004).
- Verleger, Phil and Robert E. Litan. 2001. *Energy Price Controls: Been There, Done That*. Washington Post op-ed, May 21.





## Digital Economics

The development of digital technologies has turned information from an intangible entity into binary bits. This transformation, coupled with reduced costs in storing, transferring, and computing data, has driven the final costs of transactions, especially in search, coordination, and transportation, in the economy down to zero.

The primary consequence of reduced transaction costs is the development of digital goods and services with features like zero final costs, indivisibility, non-excludability, and non-rivalry (or non-exclusiveness). Their future productivity concerning scale and network externalities stands out as one of their most significant characteristics. The production method, market structure, and pricing pattern of these goods and services significantly differ from tangible, non-digital goods, which will be examined and analyzed in this course.

The second significant consequence is the elimination of traditional informational intermediaries in the process of shaping supply and demand in the market between consumers and firms and the reduction of information frictions through bilateral and multilateral platforms. These platforms, functioning as novel informational intermediaries, can enhance economic efficiency, improve the quality of produced goods, and utilize the idle capacity of durable goods by reducing informational asymmetry. On the other hand, the positive external effects of platform networks, while maintaining positive feedback and adopting effective dependency strategies, may reduce market competition and lead to the formation of dominant and monopolistic platforms. Platform economics and the access economy are among the most critical topics discussed in this course.

The primary resources for this course are as follows:

- Belleflamme and Peitz, “The Economics of Platforms”, Cambridge University Press, 2021.
- McAfee, “More from less”, Simon & Schuster, 2019.
- Overby and Audestad, “Introduction to Digital Economics”, Springer, 2nd ed. 2018.
- Shy, “The Economics of Network Industries”, Cambridge University Press, 2004.
- Varian, “Intermediate Microeconomics”, W.W. Norton & Company, 9th ed., 2014.



## 44509: Technology, Innovation, and Development

The industrialization issue and the role of technology have always been at the center of research in the development field. Innovation is often referred to as a key driver of economic development, yet this concept is frequently ambiguously defined. This course considers a broad spectrum of ideas and perspectives on innovation, explaining why innovation has become the primary driver of development activities. The primary perspective of neo-Schumpeterian economics is innovation, which focuses on studying the relationship between technological capabilities, development, and the convergence of economies. As convergence is understood as a means to reduce income disparities between advanced and follower countries, analyzing the various dimensions of the knowledge concept becomes crucial. The phenomenon of convergence will be studied at three levels:

country, sector, and company.

Most technological innovations are generated by commercial enterprises involved in industries, service sectors, and beyond. Additionally, this course will explore the developmental experiences of various countries, including Korea, China, Japan, Latin American countries, and others.

The primary resources for this course are as follows:

- Philippe Aghion, Céline Antonin, Simon Bunel (2021), *The Power of Creative Destruction*, Harvard University Press.
- Arkebe Oqubay and Kenichi Ohno, (2019), *How Nations Learn: Technological Learning, Industrial Policy, and Catch-up*, Published to Oxford Scholarship
- Lee, K. (2019) *The Art of Economic Catch-Up*, Cambridge University Press.
- Acemoglu and Robinson, *Why Nations Fail*, Crown Business, 2012.
- Agrawal, J. Gans, A. Goldfarb (2019), *The Economics of Artificial Intelligence*, National Bureau of Eco-

nomics Research.

- Clayton Christensen (2019), *The Prosperity Paradox: How Innovation Can Lift Nations Out of Poverty*, HarperBusiness, New York.
- Lee, K. (2013), *Shumpeterian Analysis of Economic Catch up*, Cambridge University Press.
- Mark Zachary Taylor, (2016), *The Politics of Innovation: Why Some Countries Are Better Than Others at Science and Technology*, Published to Oxford Scholarship.

## 44506: Evaluation and Analysis of Public Policy

Policy analysis is a process of research and exploration in a field where the necessary information for understanding and improving public policies is generated and made available to policymakers and other stakeholders. The application of critical, reasoned, and scientific methods in the process of policy analysis distinguishes this profession from commonplace approaches to policy.

Policy analysis methods encompass the entire policy-making process, from problem structuring and creating policy solutions to forecasting, recommendation, monitoring, and evaluation. Each of these analytical methods used at different stages of the policy-making process relies on its own specific theoretical and statistical logic, and consequently, each method has its strengths and weaknesses.

Thus, students in this course become acquainted with the theoretical foundations and practical methods of policy analysis, enhancing their knowledge and skills in analyzing the required information in the policymaking process. The primary resources for this course are as follows:

- Greene, William H. *Econometric analysis*. Pearson Education India, 2003.
- Wooldridge, Jeffrey M. *Econometric analysis of cross section and panel data*. MIT press, 2010.
- William Dunn, *Public Policy Analysis* (Longman, 2011), 5th edition
- Weimer and Vining, *Policy Analysis*, 5th Edition, 2010.







## Sociology for Policy-Making

The main objectives of this course are as follows:

- Familiarizing students with key concepts and theories in sociology relevant to policymaking.
- Establishing connections between sociological theories and concepts with the transformations and conditions of Iranian society, utilizing everyday examples, historical evidence, statistics, and information.
- Introducing students to the role of policymakers in society, their relationship with various social groups, and the influence of their social background and identity in shaping policies.

The primary resources for this course are:

- Chapters from two sociology textbooks: Giddens et al. (2017) and Ferrante (2011).
- Chapters from the translated book 'Sociological Theory' by Ritzer (1395).





**Graduate School of Management and Economics**

Sharif University of Technology

Azadi Street, Tehran, Iran / P.O. Box: 11155-8639

Telephone: +98 21 66022755 / Fax: +98 21 66022759

Web site: <http://gsme.sharif.edu/>