BOSTON UNIVERSITY
Department of Economics (Fall 2020)
Hub Learning Outcomes

EC101. Introductory Macroeconomic Analysis

Hub Learning Outcomes: This class will predominantly fulfill the *Social Inquiry* and *Critical Thinking* components of the Hub Capacities, in addition to Hub Capacity *Ethical Reasoning*. Inquiry in the social sciences examines the interplay of factors driving outcomes in the social world. Students will be taught to identify and apply major concepts used in economics to explain individual and collective human behavior, and using this knowledge will explore the factors that shape the creation and adoption of effective public policy.

In addition, students will develop *critical thinking* tools by learning to develop formal models of social processes and understand how to create systematic explanations of social phenomenon. Our emphasis in this regard will be to focus on aspects of critical thinking which while not unique to the discipline of economics, may well find its' greatest expression in this field. A central tenant in economics is the "there is no such thing as a free lunch" which means that when a resource (which, of course, includes time) is used in one way it is automatically not being used in another way, and the value of this foregone most valued alternative use is a cost, called opportunity cost. People without economics training will sometimes criticize economists by dismissively claiming that they are fixated on costs, with the implication that we are akin to accountants auditing a business and simply focused on keeping costs low. This shows an ignorance of the central intellectual approach in economics of looking at a net benefit criteria, i.e. decisions must be made on the basis of comparing benefits to costs, and neither by itself is sufficient. We combine this point with a second central tenant in economics that rational decisions require a comparison of costs and benefits *at the margin* of the decision, and that any decision must take into account all relevant costs and benefits. In this context students will be introduced to the ideal of optimality, i.e. an allocation of resources based on taking actions whenever marginal benefits exceed marginal costs. Using these deceptively simple ideas we challenge students to apply them when thinking about a wide range of questions, such as what constitutes an optimal level of pollution abatement, why do enrollments is post-graduate education tend to be countercyclical, does it make sense to attend lectures, and so forth. Learning how to critically evaluate decisions in this fashion is vital to an extremely wide range of social analysis. In addition, we train students to think about how people respond to incentives, and to recognize that what many people think is the end of a story is really just the beginning. For example mandatory seatbelt laws will increase the survival probability in an accident but may not save lives on balance if people feel safer and drive more recklessly. It really depends on how people respond to changes in their environment which are caused by policy (a change in incentives), and the likely magnitude of these changes. This observation leads to potentially quite different conclusions than would otherwise be drawn in many situations such as the impact of rent control, minimum wages, and changes in compensation and employment policy. We try to emphasize that economics is at its' core a way of thinking through changes in systems, and developing this capacity it essential for social analysis.

Regarding *Ethical Reasoning*, a central learning outcome is that students "should consider their responsibilities to future generation of humankind, and to stewardship of the Earth." In EC101 we approach this question through an introduction to environmental economics. The goals is to provide an understanding of the effects of negative environmental externalities on causing excessive levels of pollution, and on this basis considering the design of policies to address the problems. An important part of training in microeconomics deals with understanding how individual actions focused on reaching their objectives interface with what is optimal for the broader community. Students are taught that in most cases optimization in markets achieves compatibility between individual and societal objectives, simply shown by the roles of prices forming the sinews of Adam Smith's "Invisible Hand of the Marketplace", but when externalities are present markets left to their own devices fail to achieve an optimal allocation of resources. Understanding how externalities lead individual optimization to either do too much or too little of an activity, and how society might respond to this challenge is vitally important to the design of health institutions and social interactions. And, in this regard students are trained to think of market-based ways, i.e. altering incentives, to achieve compatibility between individual and societal objectives, as opposed to either command and control networks or simple appeal to "do the right thing." These concept will also find important applications in defining what is meant by a Public Good and Common Resources Good, and how to achieve an optimal allocation.

The question of ethics will also arise in the contact of considering how to best address the many thousands of people who die each year waiting for organ transplants. In recent year economics such as Noble Prize winner Alvin Roth has designed market mechanism to address shortages of organs available for transplantation, but this has engendered fierce debate regarding the ethical efficacy of any form of trade or barter in organs. The class is introduced to this novel market design and discusses the ethical consideration involved. Finally, in the context of Common Resource Goods, we will see how this class of goods will potentially lead to species eradication, such as elephants being hunted for their ivory and over-fishing of the seas, and again what policies might address these problems.

Department Outcomes: Within the economics department, EC101 is half of a full-year introductory sequence in economics, the other half being EC102 (Macroeconomics). These classes form the foundation of the major, after which students may proceed to their core EC200 level courses in Intermediate Microeconomics (EC201), Intermediate Macroeconomics (EC202), and Empirical Analysis in Economics (EC203 and EC204).

EC102. Introductory Macroeconomic Analysis

Hub Learning Outcomes: This class will predominantly fulfill the *Social Inquiry 1* and *Global Citizenship and Intercultural Literacy* units of the BU Hub.

Inquiry in the social sciences examines the interplay of factors driving outcomes in the social world. Students will be taught to identify and apply major concepts used in economics to explain individual and collective human behavior, and using this knowledge will explore the factors that shape the creation and adoption of effective public policy.

This course also provided essential foundation for informed Global Citizenship. An essential part of any introduction to macroeconomics must include what is known as Open-Economy Macro, i.e. the connections between the domestic economy and the world economy. We live in an ever more connected world, with production often taking place not in a single country, but rather through networked supply chains spanning multiple countries. Awareness of cultural difference can be essential for these interactions, but does a systems-level understanding of cause-and-effect in international economics relationships, and without this understanding a "global citizen" will often not have a framework within which to understand conflict between nations, and the potential benefits from interdependence.

Department Outcomes: Within the economics department, EC102 is half of a full-year introductory sequence in economics, the other half being EC101 (Microeconomics). These classes form the foundation of the major, after which students may proceed to their core EC200 level courses in Intermediate Microeconomics (EC201), Intermediate Macroeconomics (EC202), and Empirical Analysis in Economics (EC203 and EC204).

EC201 C Intermediate Microeconomic Analysis

Hub Learning Outcomes: This class will fulfill the *Social Inquiry II* and *Critical Thinking* components of the Hub Capacities. Inquiry in the social sciences examines the interplay of factors driving outcomes in the social world. Students will be taught to identify and apply major concepts used in economics to explain individual and collective human behavior, and using this knowledge will explore the factors that shape the creation and adoption of effective public policy.

In addition, students will develop *critical thinking* tools by learning to develop formal models of social processes and understand how to create systematic explanations of social phenomenon. Our emphasis in this regard will be to focus on aspects of critical think which while not unique to the discipline of economics, may well find its' greatest expression in this field. A central tenant in economics is the "there is no such thing as a free lunch" which means that when a resource (which, of course, includes time) is used in one way it is automatically not being used in another way, and the value of this foregone most valued alternative use is a cost, called opportunity cost. People without economics training will sometimes criticize economists by dismissively claiming that they are fixated on costs, with the implication that we are akin to accountants auditing a business and simply focused on keeping costs low. This shows an ignorance of the central intellectual approach in economics of looking at a net benefit criteria, i.e. decisions must be made on the basis of comparing benefits to costs, and neither by itself is sufficient. We combine this point with a second central tenant in economics that rational decisions require a comparison of costs and benefits *at the margin* of the decision, and that any decision must take into account all relevant costs and benefits. In this context students will be introduced to the ideal of optimality, i.e. an allocation of resources based on taking actions whenever marginal benefits exceed marginal costs. Using these deceptively simple ideas we challenge students to apply them when thinking about a wide range of questions, such as what constitutes an optimal level of pollution abatement, why do enrollments is post-graduate education tend to be countercyclical, does it make sense to attend lectures, and so forth. Learning how to critically evaluate decisions

in this fashion is vital to an extremely wide range of social analysis. In addition, we train students to think about how people respond to incentives, and to recognize that what many people think is the end of a story is really just the beginning. For example mandatory seatbelt laws will increase the survival probability in an accident but may not save lives on balance if people feel safer and drive more recklessly. It really depends on how people respond to changes in their environment which are caused by policy (a change in incentives), and the likely magnitude of these changes. This observation leads to potentially quite different conclusions than would otherwise be drawn in many situations such as the impact of rent control, minimum wages, and changes in compensation and employment policy. We try to emphasize that economics is at its' core a way of thinking through changes in systems, and developing this capacity it essential for social analysis.

In comparison to our Introductory Microeconomic Analysis (EC101) class, this intermediate level course addresses many of the same topics but in a distinctly more formal manner by building complex graphical and mathematical models of social processes. In addition, a number of new topics such as optimization models of consumer choice, general equilibrium, and informational economics issues are addresed.

Department Outcomes: Within the economics department, EC201 is half of a full-year intermediate sequence in economics, the other half being EC202 (Intermediate Macroeconomic Analysis). These classes form the foundational theoretical core of the major, in additional the empirical foundational courses Empirical Economics I and II (EC203 and EC204), or in the alternative Empirical Economic Analysis I and II (EC303 and EC304 which is set at a more rigorous theoretical and mathematical level).

ECONOMICS 202
Boston University **Intermediate Macroeconomic Analysis**

Hub Learning Outcomes: This class will predominantly fulfill the *Social Inquiry* II and *Critical Thinking* components of the Hub Capacities, in addition to *Global Citizenship*.

Inquiry in the social sciences examines the interplay of factors driving outcomes in the social world. Students will be taught to identify and apply major concepts used in economics to explain individual and collective human behavior, and using this knowledge will explore the factors that shape the creation and adoption of effective public policy.

Students will develop *critical reasoning* tools by learning to develop formal models of social processes and understand how to create systematic explanations of social phenomenon. Detailed, and progressively more complex model of the macroeconomy will be developed throughout the course, e.g. initial models do not allow for a foreign sector and later models, or open-economy macroeconomics adds a foreign sector. Our emphasis in this regard will be to focus on aspects of critical think which while not unique to the discipline of economics, may well find its' greatest expression in this field. A central tenant in economics is the "there is no

such thing as a free lunch" which means that when a resource (which, of course, includes time) is used in one way it is automatically not being used in another way. As in microeconomics. Macroeconomics also focuses attention on the evaluation of tradeoffs, for example economics growth and inflation, but in this case at the aggregated level of economic phenomena.

Department Outcomes: Within the economics department, EC202 is half of a full-year intermediate sequence in economics, the other half being EC201 (Intermediate Microeconomic Analysis). These classes form the foundational theoretical core of the major, in additional the empirical foundational courses Empirical Economics I and II (EC203 and EC204), or in the alternative Empirical Economic Analysis I and II (EC303 and EC304, which are set at a more rigorous theoretical and mathematical level).

CAS EC203
Empirical Economics I

Hub Learning Outcomes: This class will predominantly fulfill the Quantitative Reasoning I Hub Capacity. Students will be provided with an introduction to statistics, beginning with descriptive statistical analysis though basic regression analysis. Throughout the class students will be taught how to use an econometrics software package (Stata) in the context of each statistical concept on the syllabus, and to the extent possible, in the context of economics-related empirical research questions. Our goal is to provide students with the tools needed both to perform statistical analysis of their own, and to be critical consumers of reported statistical evidence, i.e. concept of endogeneity, causality, omitted variables biases appear at different levels of sophistication throughout the sequence.

Department Outcomes: Within the economics department, EC203 is half of a full-year empirical analysis sequence in economics, the other half being EC204. These classes are part of the core EC200 level courses in both the major and minor, the other two being Intermediate Microeconomics (EC201), and Intermediate Macroeconomics (EC202), and provide the foundations for upper level electives.

EC303: Empirical Economic Analysis 1
Boston University

Hub Learning Outcomes: This class will predominantly fulfill the Quantitative Reasoning I Hub Capacity. Students will be provided with an introduction to statistics, beginning with descriptive statistical analysis though basic regression analysis. Throughout the class students will be taught how to use an econometrics software package (Stata) in the context of each statistical concept on the syllabus, and to the extent possible, in the context of economics-related empirical research questions. Our goal is to provide students with the tools needed both to perform statistical analysis of their own, and to be critical consumers of reported statistical evidence, i.e. concept of endogeneity, causality, omitted variables biases appear at different levels of sophistication throughout the sequence.

Department Outcomes: Within the economics department, EC303 is half of a full-year empirical analysis sequence in economics, the other half being EC304. This sequence is the more mathematically and theoretically complex counterpart for the EC203/204 sequence and while it may be taken by general economics majors instead of EC203/204 (with the approval of the instructor), it is required for students in the Economics & Mathematic major. These classes are part of the core EC200 level courses in both the major and minor, the other two being Intermediate Microeconomics (EC201), and Intermediate Macroeconomics (EC202), and provide the foundations for upper level electives.

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Economics 204: Empirical Economics 2

Hub Learning Outcomes: This class will predominantly fulfill the Quantitative Reasoning II Hub Capacity. Students will be provided with a thorough grounding in econometric theory with an emphasis on applying these techniques to empirical analysis of a wide variety of cross-sectional and time-series data. Throughout the class students will be taught how to use an econometrics software package (Stata) in the context of each statistical concept on the syllabus, and to the extent possible, in the context of economics-related empirical research questions. Our goal is to provide students with the tools needed both to perform statistical analysis of their own, and to be critical consumers of reported statistical evidence, i.e. concept of endogeneity, causality, omitted variables biases appear at different levels of sophistication throughout the sequence.

Department Outcomes: Within the economics department, EC204 is the second half of a full-year empirical analysis sequence in economics, the other half being EC203. These classes are part of the core EC200 level courses in both the major and minor, the other two being Intermediate Microeconomics (EC201), and Intermediate Macroeconomics (EC202), and provide the foundations for upper level electives.

ECONOMICS 304A

Boston University **Empirical Economic Analysis 2**

Hub Learning Outcomes: This class will predominantly fulfill the Quantitative Reasoning II Hub Capacity. Students will be provided with a thorough grounding in econometric theory with an emphasis on applying these techniques to empirical analysis of a wide variety of cross-sectional and time-series data. Throughout the class students will be taught how to use an econometrics software package (Stata) in the context of each statistical concept on the syllabus, and to the extent possible, in the context of economics-related empirical research questions. Our goal is to provide students with the tools needed both to perform statistical analysis of their own, and to be critical consumers of reported statistical evidence, i.e. concept of endogeneity, causality, omitted variables biases appear at different levels of sophistication throughout the sequence.

Department Outcomes: Within the economics department, EC304 is the second half of a full-year empirical analysis sequence in economics, the other half being EC303. These classes are part of the core courses in both the major and minor, the other two being Intermediate Microeconomics (EC201), and Intermediate Macroeconomics (EC202), and provide the foundations for upper level electives.