Courses	Level of studies	SEMESTER	Number of hours taught	Number of ECTS delivered	Synopsis
Main functions of the firm	Undergraduate academic studies	1 - Fall semester	45	5	This class is designed to engage students with the key terms, concepts and areas in the study of business. Students will learn about the workings of business organisations, how they function, and how they interact with the environment. The class also considers how these business organisations are managed in their different functional areas, including the strategies used to guide them and the decisions involved in the role of the manager. Topic Outline: • Development of business and management • Concepts, definitions and origin; • Introduction to key concepts; development of organisational theory and management thought, including scientific management and the human relations school of thought. • The management role; • Decision making as central to main activities of planning, leading, organizing and controlling. • Theoretical approaches to decision making and strategic management; change management. • Managing the main functional areas; • Human resource management; • Production; • Marketing; • Finance; • Communication systems
Macroeconomics 1: aggregate functions and macroeconomic equilibrium	Undergraduate academic studies	2 - Spring Semester	45	4	Macroeconomics is the branch of economics that studies economy wide phenomena. It therefore looks beyond the study of individual behaviors and market structure which are the subjects of microeconomics. Macroeconomics focuses on aggregate indicators such as saving, consumption, investment, public expenses and international factors which are ultimately determinants of GDP, and related aggregate phenomena such as inflation and unemployment. The objective of the course is to provide an introduction to how to model the relationships between those aggregate indicators. Modelling those relationships allows understanding how economic policy (monetary and fiscal policy) can have economy wide effects. Macroeconomic modelling consists in (i) elaborating macroeconomic functions and (ii) studying macroeconomic equilibrium. This course is a follow up of Semester 1 course (Introduction à l'économie) and consists in an introduction to macroeconomics. Two main macroeconomic functions are studied: the consumption function (Chapter 1) and the investment function (chapter 2) which are core elements of aggregate demand. Those functions pertain to the real economy. The last two chapters pave the road towards macroeconomic equilibrium modelling. Chapter 3 introduces to financial markets while paying attention to the money demand and money supply. This chapter provides basic concepts that are necessary to the understanding of monetary policy. Chapter 4 is dedicated to the study of macroeconomic equilibrium taking the lenses ok Keynes. It is therefore an introduction to short-term macroeconomics and provides the (Keynesian) rationale of fiscal policy. Chapter 3 and chapter 4 are necessary to understand more elaborated macroeconomic modelling such as the IS-LM (or Aggregate Supply – Aggregate Demand) framework which will be extensively studied during Semester 3 and 4.
Computing and digital uses	Undergraduate academic studies	2 - Spring Semester		1	
Macroeconomics 2: economic policy	Undergraduate academic studies	1 - Fall semester	45	4	The goal of the course is to understand the effects of economic policy in closed and open economy Chapter 1 : The ISLM model Chapter 2 : The ISTR model Chapter 3: The Mundell-Fleming model

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Microeconomics 2 producer and consumer behaviour	Undergraduate academic studies	1 - Fall semester	45	4	The main objective of the course is to make students acquire the marginalist way of reasoning on which is build a significant part of the microeconomic theory. More generally, it is designed to help students for the analysis of economic decisions that can be observed in everyday life and to understand the crucial role of institutions and incentives in these behaviours. For this purpose, we will be thinking of individuals and firms as optimizing agents and will introduce many concepts like shadow prices, marginal costs and marginal rates of substitution that are included as basics in the economist's toolbox. Finally, the course will also be the opportunity to acquire some basic skills in building microeconomic models. 1. Production technologies and profit maximization (1. The production function, 2. Optimal combination of inputs and profit maximization) 2. Cost theory (1. Cost minimization, 2. The cost function and conditional input demand functions, 3. Costs analysis 3. The supply (1. The individual supply function, 2. The long-run aggregate supply function) 4. Preferences and constrained choice (1. Individual preferences, 2. The budget constraint and optimal choice) 5. The demand (1. Effects of income variations, 2. Effects of price variations, 3. Substitution and income effects) 6. The evaluation of gains (1. The producer surplus, 2. The gain of the consumer) 7. The normative aspects of the competitive equilibrium (1. Competition and well-being, 2. Normative considerations)
International business	Undergraduate academic studies	1 - Fall semester	20	2	Topic Outline: 1. Introduction and Overview (Globalization of markets and production) 2. Country Differences (National Difference in Political Economy , Differences in Culture, Ethics in International Business) 3. The Global Trade and Investment Environment (International Trade Theory, The Political Economy of International Trade, Foreign Direct Investment, Regional Economic Integration) 4. The Global Monetary System (The Foreign Exchange Market, The International Monetary System, The Global Capital Market) 5. The Strategy of International Business (The Organization of International Business, Entry Strategy and Strategic Alliances) 6. International Business Operation (Exporting, Importing, and Countertrade, Global Production, Outsourcing, and Logistics, Global Marketing and R&D, Global Human Resource Management)
Probability 1	Undergraduate academic studies	1 - Fall semester	45	5	Students will acquire methods to translate data; they will learn how to organize concrete situations in a random framework, more particularly through classical probabilistic events and discrete probabilistic models. They will become aware of the specific vocabulary in English Chapter I – Events and combinations State of knowledge, 1/ sets and events, 2/ properties of a partition, 3/ independence of events Chapter II – Conditional Probability 1/ construction of a conditional probability, 2/ Bayes formula, 3/ link with the independence Chapter III – Discrete random variables characterization of discrete r.v., Probability Mass Function (PMF) and Cumulative Distribution Function (CDF) 1/ expected value or mean, 2/ variance and standard deviation, 3/ Discrete Probability laws Chapter IV – Discrete random vectors 1/ joint distribution, 2/ marginal laws, 3/ independence of random variables

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Macroeconomics 3: advanced macro	Undergraduate academic studies	2 - Spring Semester	40	4	The goal of the course is to understand the effects of economic policy in an aggregated supply-demand framework
Microeconomics 3 general equilibrium and welfare economics, industrial economics	Undergraduate academic studies	2 - Spring Semester	36	4	This course has three main objectives. The first one is to move from the partial equilibrium analysis that characterizes introductory courses of microeconomics to a general equilibrium analysis, where the equilibrium on a specific market depends on what happens on another (possibly seemingly unrelated) market. The second objective is to familiarize the students some basic notions of welfare economics, such as the concepts of social welfare function and of Pareto optimality. The third objective is to consolidate and extend the understanding of the determinants of firms' behavior oncewe depart from a perfectly competitive setting.
Probability 2 and additional topics in algebra and analysis	Undergraduate academic studies	2 - Spring Semester	45	4	Students will acquire methods to organize concrete random situations, through classical discrete and continuous probabilistic models, read statistical tables. In addition, they learn method and specific vocabulary for eigenvalues, matrix diagonalization and numerical/recursive sequences
Banking and financial markets	Undergraduate academic studies	2 - Spring Semester	20	2	Chapter 1: Overview of the financial system, Chapter 2: Central Banking and Bank Regulation, Chapter 3: Business of banking, Chapter 4: Management of banking, Chapter 5: Introduction to financial markets, Chapter 6: Financial crisis.
International trade 1: international trade theory	Undergraduate academic studies	1 - Fall semester	25	3	The course offers an introduction to the theoretical analysis of the effects produced by the international trade of goods, by comparing the two polar situations corresponding to autarky and to free trade. It builds upon the tools acquired by the students in a basic microeconomic course, and it combines a graphical illustration of the main predictions with a more formal and in-depth analytical derivation
Statistical inference+ complement	Undergraduate academic studies	1 - Fall semester	30	3	This course aims at providing the basic tools in statistical inference: point and interval estimation, basic one- and two-variable statistical tests, simple ANOVA. The course documents, exercise sheets, and the correction of the assessments are made available progressively on the ENT, under "pédagogie / Licence Droit – Economie – Gestion / L3 bilingue / Statistical inference / Documents and links". Chapter 1: Random samples and the distribution of statistical indicators (What is a random sample? Random distribution of a proportion, an arithmetic mean, a variance, Other useful continuous distributions (Student, chi-square and Fisher-Snédécor probability distributions)) Chapter 2: Point estimation (Point estimation of a parameter using OLS, Properties of a point estimate, Usual estimates for an expected value, a variance, a proportion. Chapter 3: Confidence intervals (Notion of confidence interval (CI), CI of an expected value, CI of a variance, CI of a proportion (normal approximation)) Chapter 4: Usual tests on one parameter (Conformity test for a proportion, Conformity test for an expected value, Conformity test for a variance) Chapter 5: Usual tests for the equality of two parameters (Comparison of two expected values, or variances) Chapter 6: Contingency tables (Definitions : joint, marginal, conditional frequencies, Chi² tests for a one-dimensional and 2-dimensinal count table The course includes numerous examples, exercises, handouts

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Social issues and trends	Undergraduate academic studies	1 - Fall semester	30	3	The course is intended to widen the scope of students by allowing them to get a better understanding of key periods in the English-speaking world. This will show them how these past historical, cultural, and sociological events helped to shape the world we live in today, including in the fields of the economy, business and management.
Analysis of the economic situation	Undergraduate academic studies	2 - Spring Semester	20	2	The effects of the recent economic and financial crisis are still impacting economies worldwide. This course provides an introduction to theoretical and econometric tools for analysing the behavior of economies in the short-run. First, traditional business cycles theories are presented, from a historical perspective. In particular, an extended discussion compares the current economic crisis (the Great Recession) with the Great Depression (1929-1933). Second, several simple deterministic models allow analyzing economic fluctuations. Third, the econometric approach of business cycles is presented, by insisting in particular on the difficulties in separating short-term economic cycles from the long-term trend.
Langue A - Doing business in different cultures	Undergraduate academic studies	2 - Spring Semester	10	3	As the world increasingly becomes a global village with Multinationals spreading their areas of influence around the world, businessmen accordingly are being asked to negotiate with people whose culture makes them think and react in very different ways. Contracts can be signed or rejected on details that are a result of cultural differences. This 20 hour class aims to make students aware of these factors which should be given at least as much importance as the clauses of any business contract. Special focus will be placed on one of the emerging countries. Student Learning Outcomes: o To understand the theories of intercultural differences o To make students aware of the cultural pitfalls in doing business abroad o To learn to use these theories to find solutions to specific problems that may arise in business negotiations o To introduce the students to a culture that is very much in the economic and business news currently, namely India Topic Outline: o Studying negotiations & culture o Impact of culture on negotiations and communication o Globalisation and international business o International Mergers and acquisitions o Doing business in India
Microfinance and social performance	Undergraduate academic studies	2 - Spring Semester	20	x	This course is an introduction to microfinance and social performance. It will provide background in these fields as well as an overview of the main stakeholders, tools and initiatives in the microfinance industry. It will highlight the need to balance financial and social performance not only for the welfare of customers but also for the sustainability of the microfinance institution.
Economic valuation of climate chage adaptation	Master academic studies	1 - Fall semester	10	2	Climate change itself – the state of the knowledge (global, local)Reactive vs. proactive adaptationPlanned vs. autonomous adaptationSeparate adaptation planning vs. integrated development planning Valuing climate change adaptation The need for a baseline The uncertain baseline Cost-benefit analysis vs. other tools Conceptual issues WTP and WTA Discounting Income elasticity Relative price sAgricultural impacts Subsistence and near-subsistence farming Implications of market failure for valuing climate change and climate change adaptation Possible interventions; infrastructure, market development Impact valuation using agronomic, agronomic-economic, agro ecological models Impact valuation using Ricardian analysis.

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Principles of natural resources economics	Master academic studies	1 - Fall semester	20	3	The objective of this course is to understand economic principles on exhaustible and renewable natural resources, with a particular interest in international development issues. The theoretical framework is standard and requires basic knowledge in microeconomics. For instance, the Hoteling rule is presented as well as the Gordon Schaefer model for fisheries. Special emphasis is put on topics such as resources scarcity, energy and development, etc. Handouts will propose illustrations discussed during classes. They also offer an extensive bibliography which should provide an opportunity to deepen several topics.
Development economics	Master academic studies	1 - Fall semester	14	3	Since reforms in 1978, China has undergone a huge and deep transformation. After years of humiliations by foreign countries, it became the factory of the world and organized the new geography of industrial production. This course is designated to enhance your understanding of the historical background and path of evolution of China's economy, the strengths and weaknesses of this model, and the impact on the rest of the world. Lecture 1- Lessons from history 1-1: China in the global economy: a history 1-2: The pre-reform period Lecture 2- Growing out of the plan 2-1: The beginning of the reforms2-2: The dual-track system2-3: The sources of growth and the "new normal" policy Lecture 3- China and the world economy 3-1: The open-door policy and the changing comparative advantage of China 3-2: The new strategy: "One road one belt" and the new international governance
Trade policies and economic growth	Master academic studies	1 - Fall semester	18	3	The course discusses the role of international trade in the process of economic development. It introduces basic stylized facts on the pattern of trade of developing countries, and it provides a brief overview of the expected gains from trade, and of the theoretical justification for trade policies. It deals with the trade policies implemented in the past by countries that are now developed, and it reviews the empirical evidence on the relationship between trade openness, trade policies and economic growth.
Poverty and development	Master academic studies	1 - Fall semester	18	2	The course is split into two parts :· 10 hours devoted to the study of poverty measurement,· 8 hours for the introduction to the R statistical software and langage.Outline of the part devoted to poverty measurement Monetary evaluation of poverty. The identification of the poorUsual indices. Axiomatic framework. Ethical robustness. Monetary poverty in the developing world. Multidimensional analyses of poverty. Identification. Measurement First evaluations. Growth pro-poorness. Définition. Tests. Empirical evidence
Financing development	Master academic studies	1 - Fall semester	24	4	Present and analyze the full range of tools available to finance development, including public and private financing, and domestic and international financing. ii) Give a first view of the links between the different types of financing
BRICS and the world economy	Master academic studies	1 - Fall semester	14	2	Emerging economies became main actors in the world economic growth with strong differences. The purpose of this course is to allow a better understanding of some of their development models. We will pay more attention to urbanization, migrations, and international integration with a special focus on China-Africa relationships.

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Economic policy evaluation	Master academic studies	1 - Fall semester	12	3	The evaluation of development programs is at the core of the current debate of governance and public policies. How to design an evaluation protocol? How do we evaluate the impact of interventions? How interventions can affect household welfare, alleviate poverty, improve firms' performance etc? These issues are the focus of a huge and rapidly growing literature in economics and econometrics. This module will introduce the econometrics of evaluation, case studies and empirical applications to the field of development economics.
Global health economics	Master academic studies	1 - Fall semester	12	1	The course will introduce students to the main concepts of global health and study the critical linkages between global health and economic development. It includes and introduction to the Global Burden of Disease Study, a review of the macroeconomic literature that investigates the causal effect of population health on economic development (and the other way around) as well as randomized trials of public health interventions in low- and middle income countries.
Public expenditures	Master academic studies	1 - Fall semester	16	2	Public expenditures represent up to 30% of GDP in some countries. A better management of public expenditures in thus crucial for the development strategies implemented by developing countries. This lecture aims at better understanding what are the main factors explaining the efficiency of public expenditures. It aims also at evaluating their impacts.
Sustainable development economics	Master academic studies	1 - Fall semester	10	2	The course aims at giving the students a better understanding of the sustainable development concept taking the lenses of an economist. The course is organised in two chapters following the introduction on anthropisation. The first one puts emphasis on the role of natural resources in the development process and goes back to the contribution of classical economists on long term growth perspectives. It also presents the debate between weak and strong sustainability and give insights on sustainability indicators. Several topics will be developed like for instance the role of sovereign funds in the investment of rents generated by natural resources as well as the way scholars conceptualise on natural capital. The second chapter presents the sustainability debate within the international arena i.e. the emergence of international cooperation on the provision of global public goods. A particular attention will be paid to international conferences and especially those in the wake of the Earth Summit of 1992 with an update to Rio's 2012.
Complements in statistics	Master academic studies	1 - Fall semester	15	2	This course aims mainly at answering questions about STATISTICS. This course does not deal with specific econometric methods, but it may help understand and implement econometric techniques, because most of these techniques are based on or make use of the two main issues that we are going to deal with: statistical testing and statistical modeling
Macroeconometrics	Master academic studies	1 - Fall semester	16	2	Macro econometrics is concerned with the econometrics of macroeconomic data. The objective of this lecture is to better understand how to build and how to manage modern macro econometrics models. This lecture focuses both on stationary data (distributed lag models, ARDL models, forecasting…) and on non-stationary data (unit root, cointegration…) Students will have the opportunity to work on computer lab exercises.
Econometrics	Master academic studies	1 - Fall semester	16	2	This module provides an advanced econometrics on structural models, especially limited dependent variables models, selection models, panel data models and nonparametric econometrics. Empirical applications based on development issues will also be provided.

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Migration and development	Master academic studies	1 - Fall semester	20	4	The course aims at strengthening students' ability to read critically theoretical and econometric papers, providing them with an in-depth overview of the most signficant and recent contributions to the economic literature on the causes and effects of international migration. The course should also allow the student to write a memoire on the determinants or the economic effects of international migration.
Policy mix	Master academic studies	1 - Fall semester	40	6	
Financing development	Master academic studies	2 - Spring Semester	12	2	
Development macroeconomics	Master academic studies	2 - Spring Semester	14	2	The recent crisis increased the complexity of the effects of the fiscal and monetary policies worldwide. The aim of this course is to take a closer look at some of these complexities, by focusing on some of the consequences of high indebtedness, including in terms of underdevelopment traps, and of modern monetary policies, in terms of institutional traps.
Development Policy 1	Master academic studies	2 - Spring Semester	12	2	With few exceptions, public policies typically involve several levels of government. Since the 1950s, governments worldwide have transferred political responsibilities and financial resources from the central to subnational levels. Constitutions have been reformed to reflect the key role of municipalities and intermediate levels (provinces, departments, federal states) in politics and public service delivery. In a majority of countries, subnational authorities are elected today and in some countries they enjoy substantial autonomy with regard to the management of local affairs. These processes, though far from uniform, have typically been driven by high expectations on the outcomes of decentralisation in terms of democracy, economic development and the quality of public services. The course will explore whether the observed reforms and changes are in line with these expectations. Does decentralisation lead to more democracy, better services, a more equitable distribution of societal resources and higher growth? To discuss this question we will look at recent contributions to empirical research.
Development policy 2	Master academic studies	2 - Spring Semester	12	2	Successful development policies implemented in emerging countries will be analyzed, particularly in East Asia. Then, students will have to analyze by themselves the policies implemented in a specific country and their efficiency.
Long run development	Master academic studies	2 - Spring Semester	10	2	The course covers: a broad theoretical overview of different hypothesis related to differences in long-run development, empirical evidence for and against the geography hypothesis, empirical evidence for and against the culture hypothesis, empirical evidence for and against the institutions hypothesis.
Poverty and inequality	Master academic studies	2 - Spring Semester	15	2	The course covers: theories of justice, methodological aspects of poverty and inequality measurement, global aspects of poverty and inequality, effects of inequality on socio-economic outcomes and growth, macroeconomic linkages between economic growth and poverty, gender inequalities, inequality and poverty in rich countries, development policy targeting poverty.

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Development microeconomics	Master academic studies	2 - Spring Semester	32	3	The course introduces the students to the economic analysis of household decisions in rural areas of developing countries. Specifically, it introduces the students to the theoretical analysis of the functioning of different types of markets, notably land, labor and credit, and it also deals with the determinants of household formation.
Economic valuation of the environment	Master academic studies	2 - Spring Semester	10	1	The aim of the course is to discover the non-market valuation techniques, especially stated preference approaches which are becoming more and more popular. The two main stated preference approaches are the contingent valuation and choice experiment. The course will be empirically oriented and the student will learn: - how to design a stated preference survey - how to limit the different biases (e.g., hypothetical bias) - how to run models and estimate welfare estimates in STATA - how to interpret results. The course will be based on recent surveys using contingent valuation and choice experiment..
Sustainable development economics 1	Master academic studies	2 - Spring Semester	20	2	The course aims at giving the students a better understanding of the sustainable development concept taking the lenses of an economist. The course is organised in two chapters following the introduction on anthropisation. The first one puts emphasis on the role of natural resources in the development process and goes back to the contribution of classical economists on long term growth perspectives. It also presents the debate between weak and strong sustainability and give insights on sustainability indicators. Several topics will be developed like for instance the role of sovereign funds in the investment of rents generated by natural resources as well as the way scholars conceptualise on natural capital. The second chapter presents the sustainability debate within the international arena i.e. the emergence of international cooperation on the provision of global public goods. A particular attention will be paid to international conferences and especially those in the wake of the Earth Summit of 1992 with an update to Rio's 2012.
Sustainable development economics 2	Master academic studies	2 - Spring Semester	12	2	This course completes the course "Sustainable Development Economics 1". Recent innovations for sustainable development will be studied, such as circular economies, blue economies, biomimicry for sustainable technologies, reforms for social sustainability, new green finance, etc. Applied cases will be analyzed.
Poverty and the environment in Central Asia	Master academic studies	2 - Spring Semester	8	1	The main aim of the course is analyze the poverty and environmental issues in Central Asian (C.A.) countries within the framework of theories and studies on poverty reduction and environmental problems. Students will study poverty cases about Central Asian countries and by analyzing with their theioritical backroung, they will try to find out the reasons of poverty in this region. In addition, they will study the effectiveness of European Union's strategy for Central Asia to reduce poverty and environmental remediation.
Seminar: questionnaire design	Master academic studies	2 - Spring Semester	10	1	Field research has been gradually moving from paper questionnaires to phone and electronic surveys. Computer-Assisted Personal Interviewing (CAPI) is undoubtedly the most advanced stage of this progress, especially in developing countries where it has allowed significant improvement in the quality of survey data.This course explores ways to improve data quality with a focus on questionnaire design. It covers the most up-to-date technologies to design a questionnaire and collect high quality data. Students will gain a greater awareness of the dimensions of questionnaire design and the tools to assess existing surveys. Students will be able to write their own high quality questionnaires and will learn how to minimize survey errors by setting response types, using questionnaire routing, specifying data limits, and using validation rules, in line with current international best practices.

ÉCOLE D'ÉCONOMIE
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Courses	Level of studies	SEMESTER	Number of hours taught	Number of ECTS delivered	Synopsis
Econometrics	Master academic studies	2 - Spring Semester	41	3	
Statistical modelling for categorical outcomes	Master academic studies	2 - Spring Semester	15	2	1. Generalised linear models- Reminder of statistical modelling in the linear case: taking into account qualitative regressors, interactions… - Introduction of a link function and its consequences - likelihood: definition, maximisation, properties of ML estimators, consequences (LR tests, etc.) 2. Log-linear (= Poisson) models - type of data, example, irrelevance of the linear model - the log-linear model: expression and maximisation of the likelihood - interpretation of the results 3. Logistic regression - type of data, example, irrelevance of the linear model - the logit-linear model: expression and maximisation of the likelihood - Interpreting the estimators (odds ratio, etc.), and taking count of interactions - predictive quality of the Logit model: specificity, sensitivity, ROC curve 4. - Probit models Assessing the predictive quality of a model: goodness-of-fit, parsimony, model selection methods
Survey Techniques	Master academic studies	2- Spring semester	15	2	This course is primarily a practical guide to survey planning, design and implementation. It covers many of the issues related to survey taking and many of the basic methods that can be usefully incorporated into the design and implementation of a survey. It is intended to help build expertise by providing insight on what is required to build efficient and high quality surveys. Survey Methods provides students with both theoretical underpinnings and practical knowledge to build their own samplings in order to implement surveys in developing countries. The course covers the most important methodological aspects of survey design including: an introduction to survey concepts (how to define the population to be surveyed; sources of error in a survey), how to select a sample, how to design a questionnaire, methods of collecting survey data, main operations involved in data collection, evaluate and test questionnaire.
Geomatics	Master academic studies	2- Spring semester	10	1	The goal is to learn the main techniques of mapping and geographic data analysis with the software QGIS. An initiation to the software ArcGIS is also planned.
Statistical modelling for categorical outcomes	Master academic studies	2- Spring semester	19	2	This course introduces methods for count or categorical outcomes, namely Poisson and logistic/probit regression methods. By the end of the course, the students should be able to detect situations in which those methods are needed, and apply the models to simple cases using STATA.