ECONOMICS OF INNOVATION: SYLLABUS 2017

Part I: CRISTIANO ANTONELLI (15 hours)

1. INTRODUCTION AND DEFINITIONS
   1.1 INNOVATION, INVENTION, IMITATION, ADOPTION AND DIFFUSION
   1.2 THE RATE AND THE DIRECTION OF TECHNOLOGICAL CHANGE

2. THE NEOCLASSICAL ANALYSIS OF TECHNOLOGICAL CHANGE
   2.1 EXOGENOUS SHOCKS: PATHS TO DEPRESSION AND EUPHORIA
   2.2 TOTAL FACTOR PRODUCTIVITY
   2.3 TOBIN’q
   2.4 SHIFT EFFECTS AND BIAS EFFECTS

3. TECHNOLOGICAL CHANGE IN THE CLASSICAL ANALYSIS
   3.1 ADAM SMITH
   3.2 THE DEMAND PULL: KALDOR AND SCHMOOKLER
   3.3 MARX AND THE ROLE OF FACTORS’ PRICES
   3.4 MODELS OF INDUCTION: HICKS AND RUTTAN

4. THE SCHUMPETERIAN ANALYSIS OF TECHNOLOGICAL CHANGE
   4.1 THE FIRST SCHUMPETER: THE ENTREPRENEUR
   4.2 THE ROLE OF THE INNOVATIVE BANKER

5. EVOLUTIONARY CONTRIBUTIONS
   5.1 THE LIFE PRODUCT LIFE CYCLE: VERNON
   5.2 EPIDEMIC MODELS OF DIFFUSION
   5.3 SUPPLY DRIVEN DIFFUSION
   5.4 THE REPLICATOR DYNAMICS
   5.5 NATURAL SELECTION: NELSON & WINTER
   5.6 THE LIMITS OF DARWINISM AND NEOLAMARKIAN HYPOTHESES

6. THE SECOND SCHUMPETER: THE CORPORATION
   6.1 THE ROLE OF OLIGOPOLISTIC RIVALRY
   6.2 BARRIERS TO ENTRY AND MONOPOLISTIC COMPETITION
   6.3 IMITATIVE ENTRY AND THE DECLINE OF THE MONOPOLY RENTS
   6.4 STRUCTURE - CONDUCT - PERFORMANCE (t) / STRUCTURE - CONDUCT - PERFORMANCE (t +1)
   6.5 EDITH PENROSE AND THE RESOURCE BASED THEORY OF THE FIRM

7. THE ECONOMIC OF KNOWLEDGE: ARROW&GRILICHES
   7.1 THE ECONOMICS OF INFORMATION AND KNOWLEDGE
7.2. THE TECHNOLOGY PRODUCTION FUNCTION
7.3 SPILLOVER AND EXTERNALITIES: JACOBS / MAR / GLOBAL / LOCAL
7.4 THE KNOWLEDGE GENERATION FUNCTION

8. THE CREATIVE RESPONSE AND THE ECONOMICS OF COMPLEXITY
8.1 INNOVATION AS A CREATIVE REACTION
8.2 THE NOTION OF EMERGENCE

9. SCHUMPETERIAN GROWTH REGIME
9.1 THE CAPITALIZATION OF KNOWLEDGE
9.2 THE KNOWLEDGE INDUSTRY
9.3 THE OPEN TECHNOLOGY APPROACH

BASIC READING

Antonelli, C. (2009), The economics of innovation: From the classical legacies to the economics of complexity, *Economics of Innovation and New Technology* 18, 611–646.


**PART II (Economics of Science) – ALDO GEUNA (15 hours)**

The module will introduce the students to the Economics of Science. After a brief discussion on the economics of knowledge the course will focus on the economics of science. The second class will be devoted to the understanding of the basic principle of scientific production and the organization of labor within science. The third class will examine how to model econometrically scientific productivity paying particular attention to the impact of mobility on productivity and considering gender and family determinants. Finally, the last part of the course examine in some detail university industry relationships from both a theoretical and empirical perspective. The last two hours of the course will be devoted to students’ presentations, four seminal papers in the field will be critically discussed.
1. Introduction to the Economics of Knowledge and Economics of Sciences
2. The Production and Organization of Science
3. The productivity of science: mobility and gender effects
4. University-Industry Relationships
5. University-Industry Relationships
5.2 Students’ presentations

References


BOOKS

