

# Study Guide

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DEPARTMENT OF PHILOSOPHY  
AND HISTORY OF SCIENCE

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Gottfried Wilhelm Leibniz (1646–1716)

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Προμετωπίδα του έργου *Opus Geometricum*  
του Gregory of St. Vincent (1647)

# 1

## Preface

The Department of Philosophy and History of Science (PHS) was founded in 1992 with a unanimous decision of the Senate of the National and Kapodistrian University of Athens and began its operation during the academic year 1994–1995, with the admission of its first students.

The Department's subject is Philosophy of Science, as well as Philosophy in general, and History of Science. Faculty members specialize also in subjects like Cognitive Science and the Theory of Institutions. Another central study area of the Department is the University itself, its historic course, its academic traditions and its manner of organization and administration.

The duration of studies is four years. During the first two years, students are acquainted with the analytical tools necessary for the philosophy and history of science. They are taught ancient Greek and basic courses in the sciences, as well as in the history of philosophy, art and civilization. During the second cycle (3rd and 4th year), students specialize in the Philosophy and History of Science and Technology, and their relationship with the social world. In September 2009 the number of registered students was about 1085, while the number of graduates was 613.

The Department is divided into four (4) Divisions:

- Philosophy and Theory of Science and Technology (PTST)
- History of Science and Technology (HST)
- Sciences of Cognition and Thinking (SCT)
- Science and Society, Art and Culture (SSAC).

The Department participates in the Inter-Departmental Programme of Undergraduate Studies of N.K.U.A. "Gender and Equality" and the following Inter-University Programmes of Graduate Studies:

- History and Philosophy of Sciences and Technology
- Basic and Applied Cognitive Science
- Logic and Theory of Algorithms and Computation
- Didactics and Methodology of Mathematics
- Brain and Mind.

The Department runs the administration of the first two programmes; the third and fourth programmes are run by the Department of Mathematics of NKUA and the fifth by the Department of Medicine of the University of Crete. In September 2009 the number of registered students was about 824 and the number of graduates was 407 (about 369 with Master and about 38 with Doctoral degrees).

The following Laboratories operate in the Department, contributing significantly to educational and research activities:

- Electronic Processing of Historical Archives
- Cognitive Science and Educational Technology
- Knowledge Management.

Furthermore, the creation of a Laboratory of Historic Experiments in the Physical Sciences is currently being promoted.

Though PHS is still a relatively new Department, it has earned the respect of the scientific community both in Greece and abroad, as certified by favourable comments and positive reports that have been made in connection to its educational and research contribution. As a recent study by a member of the Department has shown, the professional/academic development of its graduates is especially satisfactory, since a high percentage of them occupy positions in the public and private sector or pursue graduate studies and research in Greece and abroad.

On the occasion of the appearance of the present Study Guide, I would like to thank all members of the Department for their work and wish to all our students a fruitful and enjoyable course of studies with us.

The Department Chairperson  
Professor Constantinos Dimitracopoulos

## 2

# Faculty and Administration

The Department of History and Philosophy of Science was founded with Presidential Decree B1/57/23-2-1993. On the basis of article 5 paragraphs 1 and 2 and the election of Chairman and Vice Chairman on January 23, 1995, it became an independent Department.

Chairperson of the Department is Professor *Constantinos Dimitracopoulos*, while Vice-Chairperson is Professor *Dionysios Anapolitanos* (their terms end on August 31, 2011). Director of the Division of Philosophy and Theory of Science and Technology is Professor *Stathis Psillos*, while Director of the Division of History of Science and Technology is Associate Professor *Jean Christianidis* (their terms end on August 31, 2010).

The Department is accommodated in three buildings on the southern side of the University campus. The first building, located at the main gate of the campus (in the area of Ilissia) houses the secretariat, the offices of faculty members and the office of the Student Association, as well as a small meeting/seminar room. The second building (next to the first) accommodates the Laboratory of Electronic Processing of Historical Archives and the Laboratory of Cognitive Science and Educational Technology. The third building, located next to the indoors gymnasium of the campus, about four hundred meters north of the main gate, houses the lecture rooms, the undergraduate PC laboratory, the Department's library and the Laboratory of Knowledge Management. The postal address of the Department is

Department of Philosophy and History of Science  
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Panepistimiopolis  
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and the fax number in the office building is +30 210 727 5530.

The address of the Department's website, which operates under the supervision of Assistant Professor *Aristides Hatzis*, is <http://www.phs.uoa.gr>

## 2.1 Faculty Members

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*Petros Gemtos* (Methodology, Philosophy and History of Social Sciences),  
former Rector of N.K.U.A. and Chairman of the Department  
*Dimitris Dimitrakos* (Methodology of Political Science and Political Philosophy)  
*Myrto Dragona-Monachou* (Ancient Philosophy - Contemporary Ethics and Social Philosophy)  
*Ioannis Kontos* (Artificial Intelligence)  
*Konstantinos Krimbas* (History and Philosophy of Biology)  
*Vasileios Kyrkos* (History of Philosophy)  
*Anastasios Bougas* (Ideology and Science)  
*Athanase Tzavaras* (Methodology, History and Theory of Neurosciences and Psychiatry)  
*Paul Christodoulidis* (Epistemology and History of Art)

## 2.3 Visiting Faculty

<i>Aikaterini Argyropoulou</i>	<i>Gerasimos Merianos</i>
<i>Sotirios Glavas</i>	<i>Petros Stefaneas</i>
<i>Nikolaos Kalospyros</i>	<i>Sylva Haralambous</i>
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## 3

# Programme of Undergraduate Studies

### 3.1 Regulations

The Programme of Undergraduate Studies includes compulsory, elective-compulsory and elective courses. Students have to attend successfully

- thirty five (35) compulsory courses,
- two (2) compulsory laboratory courses,
- at least seven (7) elective-compulsory courses, depending on the stream they will choose
- at least six (6) elective courses

and write an undergraduate Diploma dissertation.

The workload required by each student to satisfy these requirements corresponds to 255 credit units of the ECTS (European Credit Transfer System), which are divided as follows:

- 175 from compulsory courses (35X5)
- 5 from compulsory laboratory courses (2,5X2)
- 35 from elective-compulsory courses (7X5)
- 30 from elective courses (6X5) και
- 10 from the dissertation.

All courses are taught for three (3) hours per week, except the laboratory ones, which are taught for two (2) hours per week.

Every academic year, the courses taught include

- all compulsory courses and the elective-compulsory courses  $\Phi101$ – $\Phi102$  and I201–I202
- at least four (4) of the elective-compulsory courses  $\Phi103$ – $\Phi121$ , at least four (4) of the elective-compulsory courses I203–I211 and at least one (1) of the elective-compulsory courses I $\Phi$ 01–I $\Phi$ 03.

The streams of studies available are

- History and Philosophy of Science and Technology
- Philosophy of Science and Technology
- History of Science and Technology.

The students choose a stream at the beginning of their third year of studies, but they have the option to change it at the end of this year.

Performance in the laboratories E100 and E200 is characterized with the terms “pass”/“fail” and is not taken into account for the calculation of the final graduation grade.

The graduation grade is calculated as follows: One adds the grades of the forty eight (48) courses that each student has passed (that is, 35 compulsory + 7 elective-compulsory + 6 elective) and twice the grade of the undergraduate dissertation. The final sum is divided by fifty (50).

The indicative distribution of courses each student should attend is the following:

Semester	Courses
1st	6 compulsory
2nd	6 compulsory
3rd	6 compulsory
4th	6 compulsory
5th	4 compulsory 1 elective-compulsory 1 elective
6th	3 compulsory 2 elective-compulsory 1 elective
7th	2 compulsory 2 elective-compulsory 2 elective
8th	2 compulsory 2 elective-compulsory 2 elective

## 3.2 Compulsory Courses

- K001. History of Philosophy I
- K002. History of Philosophy II
- K003. History of Philosophy III
- K004. Introduction to Philosophy
- K005. Political Philosophy
- K006. Ethics
- K007. Epistemology and Metaphysics
- K008. Philosophy of Social Sciences
- K009. Philosophy of Physical Sciences
- K010. Philosophy of Language
- K011. Philosophy of Mind
- K012. Legal Theory
- K013. History of Civilization I (Antiquity)
- K014. History of Civilization II (Middle Ages)
- K015. History of Civilization III (Modern Institutions)
- K016. History of Mathematics
- K017. History of Physical Sciences
- K018. History of Biology
- K019. History of Technology
- K020. Introduction to the History of Art
- K021. History of Economic Thought
- K022. Introduction to Psychology
- K023. Introduction to Neuroscience
- K024. Cognitive Science
- K025. Ancient Greek Language and Literature
- K026. Elements of Logic and Set Theory
- K027. Introduction to Mathematical Analysis I
- K028. Introduction to Mathematical Analysis II
- K029. Introduction to Newtonian Mechanics and the Theory of Relativity
- K030. Introduction to Thermodynamics and Electromagnetism
- K031. Principles of Economics I

- K032. Principles of Economics II
- K033. Introduction to the Social and Human Sciences
- K034. Biology
- K035. Statistics
- E100. Informatics (Laboratory)
- E200. Essay Writing (Laboratory)

### **3.3 Elective-Compulsory Courses**

#### **History and Philosophy of Science and Technology**

- Φ101. Philosophy of Science I
- Φ102. Philosophy of Science II
- Φ103. Philosophy of Law
- Φ104. Aesthetics
- Φ105. Logic
- Φ106. Philosophical Texts
- Φ107. Applied Ethics
- Φ108. Plato and Aristotle
- Φ109. Rationalism - Empiricism
- Φ110. Analytical Philosophy
- Φ111. Medieval Philosophy
- Φ112. Economics and Law
- Φ113. Continental Philosophy
- Φ114. Philosophy of Mathematics
- Φ115. Philosophy of Physics
- Φ116. Philosophy of Biology
- Φ117. Philosophy and Methodology of Economics
- Φ118. Philosophy of History
- Φ119. Kant
- Φ120. German Idealism
- Φ121. Philosophical Logic
- I201. Scientific Revolution
- I202. History of Sciences in Antiquity
- I203. Introduction to Historiography

- I204. History of Logic
- I205. Greek Science in Modern Times
- I206. History of Scientific and Technological Policy
- I207. History of Science and Technology in Modernity
- I208. History of Astronomy
- I209. History of Experiments
- I210. Science, Technology and Society: Technology and Development
- I211. Elements of Technology
- I212. History of Economic Thought in the 20th Century
- IΦ01. Artificial Intelligence
- IΦ02. Psychology of Thinking
- IΦ03. History of Psychology

Each student choosing this stream has to attend successfully

- courses Φ101 and I201
- two (2) of the courses Φ102–Φ121 and two (2) of I202–I211
- one (1) of the courses IΦ01–IΦ03.

### **Philosophy of Science and Technology**

- Φ101. Philosophy of Science I
- Φ102. Philosophy of Science II
- Φ103. Philosophy of Law
- Φ104. Aesthetics
- Φ105. Logic
- Φ106. Philosophical Texts
- Φ107. Applied Ethics
- Φ108. Plato and Aristotle
- Φ109. Rationalism - Empiricism
- Φ110. Analytic Philosophy
- Φ111. Medieval Philosophy
- Φ112. Economics and Law
- Φ113. Continental Philosophy
- Φ114. Philosophy of Mathematics
- Φ115. Philosophy of Physics

- Φ116. Philosophy of Biology
- Φ117. Philosophy and Methodology of Economics
- Φ118. Philosophy of History
- Φ119. Kant
- Φ120. German Idealism
- Φ121. Philosophical Logic
- IΦ01. Artificial Intelligence
- IΦ02. Psychology of Thinking
- IΦ03. History of Psychology

Each student choosing this stream has to attend successfully

- courses Φ101 and Φ102
- four (4) of the courses Φ103–Φ121
- one (1) of the courses IΦ01–IΦ03.

### **History of Science and Technology**

- I201. Scientific Revolution
- I202. History of Sciences in Antiquity
- I203. Introduction to Historiography
- I204. History of Logic
- I205. Greek Science in Modern Times
- I206. History of Scientific and Technological Policy
- I207. History of Science and Technology in Modernity
- I208. History of Astronomy
- I209. History of Experiments
- I210. Science, Technology and Society: Technology and Development
- I211. Elements of Technology
- I212. History of Economic Thought in the 20th Century
- IΦ01. Artificial Intelligence
- IΦ02. Psychology of Thinking
- IΦ03. History of Psychology

Each student choosing this stream has to attend successfully

- courses I201 and I202
- four (4) of the courses I203–I211
- one (1) of the courses IΦ01–IΦ03.



## **3.4 Elective Courses**

### **Philosophy Courses**

- Meta-ethics
- Meta-philosophy
- Philosophy of Religion
- Topics in Metaphysics
- Critique of Pure Reason
- Philosophy and Literature
- Theories of Law and Justice
- Special Topics in History of Philosophy
- Special Topics in Philosophy of Science
- Special Topics in Contemporary Philosophy
- Special Topics in Practical Philosophy
- Special Topics in Logic
- Special Topics in Philosophy of Mathematics
- Special Topics in Philosophy of Physical Sciences
- Special Topics in Philosophy of Mind
- Special Topics in Philosophy of Psychology
- Special Topics in Moral, Political and Legal Theory I
- Special Topics in Moral, Political and Legal Theory II

### **History Courses**

- History and Theory of Psychiatry
- Management of Historical Information
- Introduction to The History of Medicine
- Special Topics in European History
- Special Topics in History of Greek Science
- Special Topics in History of Technology
- Special Topics in History of Physics and Chemistry
- Special Topics in History of Mathematics
- Special Topics in History of Logic
- Special Topics in History of Medieval Science
- Special Topics in History of Medicine

- Modern History of Universities
- Educational Institutions of Modern Hellenism

### **Social Sciences Courses**

- Entrepreneurship and Development
- Introduction to Legal and Political Institutions
- European Union: Institutions and Policies
- Institutions and Economy
- Sociology and Social Anthropology
- Law in Literature, Theatre and Cinema
- Special Topics in Political Philosophy and Science
- Special Topics in History of Economic Thought
- Special Topics in Economic Thought
- Special Topics in Philosophy of Social Sciences
- Special Topics in Medieval History
- Special Topics in History and Theory of Institutions

### **Pedagogy Courses**

- Introduction to Pedagogy
- Career Counselling and School Career Guidance
- Comparative Pedagogy and International Educational Policy
- Analytical Programmes of Secondary Education
- Psycho-social Dimensions of School Performance
- Special Education
- Environmental Education
- Modern Didactics
- Psychology and Education
- History of Educational Policy

### **Gender and Equality Courses**

- Women in History of Science
- Science and Gender
- Gender and Social Theory
- Sociology of Gender Relations

## Other Courses

- Essay Writing II
- Latin
- Ancient Greek Literature
- History of Classical Philology
- Longinus' "On the sublime" and modern literary criticism
- Theory of Literature
- Introduction to Linguistics
- Museology
- Comparative Museology
- Cultural Resources Management
- Greek Painting in the 19th and 20th Century
- Modern Art
- History of Art I
- History of Art II
- History of Graphic Arts
- Methodology and Theory of Philology
- Introduction to Psychoanalysis
- Knowledge Management
- Special Topics in Informatics
- Methodology and Philosophy of Informatics
- Applications of Logic to Informatics

## 3.5 Course Syllabuses

### Compulsory Courses

K001. History of Philosophy I

Detailed overview of ancient Greek philosophical thought from its origins to the end of the classical period. With reference to original texts from ancient philosophical literature and pertinent collections of fragments, a thorough examination of the cosmological speculations of the Presocratics and of the emergence of the issues related to the nature of logos in thinkers such as Heraclitus, the Eleatics and the Sophists. The Socratic method of aporia and elenchus. Plato's theory of Ideas and his structural analysis of the soul and of the state. The advancement of logic, scientific methodology, ontology and ethics by Aristotle. Several problems and concepts which have evolved during this period are discussed in the light of

contemporary criticism, as also are the various philosophical positions, the arguments and the debates which have emerged within the context of ancient Greek philosophical thinking.

#### K002. History of Philosophy II

Presentation of the development of philosophical thinking from the beginnings of the Hellenistic period to the Middle Ages. The philosophy of the Epicureans, the Stoics and the Sceptics, of both the Academic and the Pyrrhonian variety. The debates among the various schools. The gradual emergence of neo-dogmatic tendencies, mainly in the area of Middle- and Neoplatonism. The formation of new conceptions of man's nature, of his fate and his place within the cosmos, under the influence of the Judeo-Christian tradition. The new developments in the area of the methodology of science. With reference to original texts of ancient philosophical literature, and to pertinent collections of fragments, the main directions characterizing ancient philosophy until its final phase are studied. New tendencies occurring within the framework of Byzantine philosophy, but also by theologians in the West, such as St. Augustine, Boethius, Anselm, Thomas Aquinas and William of Occam are discussed. Focus is laid on problems in ontology, epistemology and logic, which were first expounded during this period, and also on issues pertaining to the relation between faith and knowledge. The appropriation of the Platonic and the Aristotelian tradition by Western thinkers, but also with some reference to parallel developments in Islamic thought.

#### K003. History of Philosophy III

The course constitutes a survey of the development of philosophical thought in Western Europe, with a view to highlighting its continuity from the 16th to the 18th century. It provides a systematic discussion of the main theories of philosophers from Descartes to Kant, focusing on their epistemological and metaphysical views, and more particularly on the controversy between rationalists and empiricists. The reconstruction of a variety of positions and of the arguments which sustain them is undertaken on the basis of a careful study and a critical analysis of texts of this period.

#### K004. Introduction to Philosophy

The course provides a first systematic introduction to philosophical reflection. The approach adopted aims at training the students in the use of basic concepts and logical tools that are necessary for the analysis of philosophical problems and for the construction and the critical discussion of arguments. It draws upon passages from well known texts from the History of Philosophy and it involves the study of issues from various areas, including Logic and the Philosophy of Language, Metaphysics, Epistemology and the Philosophy of Science, Ethics, Political Philosophy, Aesthetics, the Philosophy of Religion and the Philosophy of History.

#### K005. Political Philosophy

The course deals, on one hand, with elements of Political Science and the History of

political theories and, on the other hand, methodological topics concerning Political Science and Political Philosophy. Special attention is paid to the relationship between political theories and the historical framework in which they were emerged, as well as to the philosophical currents from which they were influenced. Special attention is also given to specific political thinkers and their work.

#### K006. Ethics

The course constitutes a systematic introduction to philosophical reflection in the field of ethics. It provides an analysis of meta-ethical issues concerning the nature and justification of moral judgments, a critical exposition of the main normative theories including utilitarianism, Kantian deontology and Aristotelian virtue ethics, and the study of recent debates in the area of applied ethics. It focuses on the discussion of particular problems, such as euthanasia, abortion, cloning, the death penalty, just war doctrine, business ethics and environmental ethics, and aims at exploring the relations between ethics and religion, politics, law and art.

#### K007. Epistemology and Metaphysics

The course is designed to make students familiar with various aspects of recent and contemporary metaphysics and epistemology. What metaphysics and epistemology are. Discussion of some of the following topics in metaphysics: what universals are, realism and nominalism about them; how (if at all) the concept of a cause can be defined; determinism and freedom of act; identity of objects through time; identity of persons through time; the ontology of possible worlds; the ontology of events. Theories about truth. Discussion of some of the following topics in epistemology: scepticism and how (if at all) it can be overcome; attempts at defining the concept of knowledge; under what conditions a belief is justified; philosophical theories about sense-perception; the old and the new riddle of induction; a priori knowledge; naturalized epistemology.

#### K008. Philosophy of Social Sciences

Enlightenment and Social Sciences. Foundations of scientific inquiry. Methodological monism in Social Sciences. Holism and Individualism as methodological programmes: The evidence from Economics and Sociology. Philosophy of Economics. The challenges of Historicism and Normativism. Towards a normative philosophy of social sciences. Contemporary criticism. Two examples: The Economics of Science and the Sociology of Science. Non-analytical epistemological approaches: Hermeneutics and Critical Social Theory. Institutions and rules. The problem of social co-operation. A value-free social science? Facts and values. Rationality and Relativism. The main functions of scientific knowledge.

#### K009. Philosophy of the Natural Sciences

This is a historical introduction to the philosophy of the natural sciences. Among the topics covered are the following:

- The nature and aim of science.
- The demarcation between science and non-science.
- The natural versus the social sciences.

- Scientific method.
- Scientific explanation.
- Theory-testing and theory-choice.
- Theory-change and scientific revolutions.
- Scientific progress.
- Scientific realism.
- Sociological and feminist approaches to science.

These topics are discussed with reference to the works of: Aristotle, Plato, Bacon, Galileo, Descartes, Newton, Hume, Kant, Whewell, Mill, Poincaré, Duhem, the Logical Positivists, Popper, Kuhn, and Feyerabend.

#### K010. Philosophy of Language

The course covers various aspects of recent and contemporary philosophy of language. We shall discuss some of the following topics, which concern particular kinds of linguistic expressions: views on the semantics of proper names; Russell's theory of definite descriptions; indexicals; reports of propositional attitudes; indicative and subjunctive conditionals; the semantics of vague words. We shall also discuss some of the following topics, which concern language in general: Frege's distinction between sense and reference; Davidsonian semantics; Grice's attempt at defining the concept of meaning and his analysis of implicature; Wittgenstein's reflections on language; Dummett's semantic views; Quine's positions on the indeterminacy of translation; Chomsky's theories about knowledge of a language.

#### K011. Philosophy of Mind

Central issues related to the nature of the mind and the mind-body problem, are examined. Our main aim is the presentation and assessment of some basic metaphysical theories such as dualism, eliminativism, reductionism, functionalism and non-reductive materialism. Additional issues examined are mental causation, consciousness and folk psychology.

#### K012. Legal Theory

In this course we will present the basic problems of legal theory and philosophy of law (the nature of law and legal obligation, rules and standards, the legal regulation of morality, theories of punishment, etc.), the work of leading thinkers (Hart, Kelsen, Finnis, Fuller, Dworkin, Posner but also Rawls and Nozick) and the most important schools of legal theory (Legal Positivism, Natural Law Theory, American Legal Realism, Law and Economics, Critical Legal Studies).

#### K013. History of Civilization I (Antiquity)

The aim is to study the ancient Greek and Roman civilizations, the reception of which, in the past and in our times, has been characterized by consecutive regressions, elevations and recessions, indicative of feelings of merit or demerit, attraction or repulsion that this civilization has caused and still causes to its receivers. Topics such as tragedy, philosophy, myth, eros, political action, art, technology, war etc.

are studied through the existing (philological or artistic) evidence and their (positive or negative) influence is evaluated.

#### K014. History of Civilization II (Middle Ages)

The course aims at a first approach to a (as far as possible) global consideration and understanding of the peculiarities of the west-european Middle Ages. In view of the didactic aim, the course will not focus on a presentation of facts, but an analysis of the basic characteristics of the era, especially those that are place- and time-independent. The first part is devoted to medieval beliefs about basic matters (space-time-man) in order to make clear the way of thinking of medieval people. In the second part, which deals mainly with the framework of social and economic history, the object of study is the factors and institutions shaping medieval life in historic fact (agricultural production, social stratification, chivalry, medieval town etc.).

#### K015. History of Civilization III (Modern Institutions)

Aim of this course is to provide an overview of the European cultural movements from the 16th century until today. Taking into consideration the large extent of the subject two different approaches are attempted. Either the course has detailed insight into a certain era or a specific topic, or it focuses on the development of cultural phenomena which are common for all European countries and span long periods. Under the first approach such topics as Renaissance, Reformation, 17th century's French Classicism, Baroque civilization, Romanticism are examined. The second approach investigates evolutionary processes, like the organizational and institutional development of the modern European states from their emergence to the constitutional state of the 19th century. On the completion of the course, students should be able to investigate these subjects in the framework of more specialized courses.

#### K016. History of Mathematics

The course covers a 3600 years period of history of mathematics, from 1800 BC to about 1800 AD. Its aim is to gain an understanding of how mathematical ideas and practices have developed over time, how social and cultural factors influenced the development of mathematics, and, conversely, how mathematics contributed to society and human culture.

- Mesopotamian and Egyptian mathematics: Number systems, arithmetic, geometry; the sources and the problems they raise; influences.
- Ancient Greek mathematics: Their distinct character (geometry, logic, axiomatic structure, mathematical proof); the sources and the problems they raise; the three classic problems; proportion theory and incommensurability; work of individual mathematicians; mathematics in the period of Late Antiquity.
- Mathematics in the Middle Ages and the Early Modern Period Islamic mathematics: the translation of Greek texts; the Hindu-Arabic numerals and the decimal place-value system; algebra; work of individual mathematicians.

- Mathematics in medieval Europe: the translations of Greek and Arabic texts; work of individual mathematicians; Byzantine mathematics.
- Early modern mathematics: the revival of Greek mathematics; algebra in the Renaissance; the solution of cubic and quartic equations; Francois Viète and the emergence of modern mathematics; work of individual mathematicians.
- Seventeenth century: analytic geometry; number theory; the theory of equations; elementary probability; the pre-calculus; Newton, Leibniz, and the invention of the calculus.
- Eighteenth century: topics in the history of 18th-century mathematics.

The course is concluded with an outline of the post-1800 mathematics.

#### K017. History of the Physical Sciences

This course examines key episodes from the history of the physical sciences, with an emphasis on the development of physical theory since the 17th century. Among the topics discussed are the following:

- Motion and gravity from Aristotle to Newton.
- The Newtonian Universe.
- Theories of heat and electricity in the 18th century.
- 19th century - the development of thermodynamics/the macroscopic approach to nature, the atomic debates/the microscopic approach to nature, the wave theory of light, the development of electromagnetism.
- The great discoveries at the end of the 19th century: X-rays, radioactivity, electrons, argon.
- Beginnings of the 20th century - ether and the theory of relativity, the quantum revolution, the problem of atomic structure.

#### K018. History of Biology

- General Overview.
- Concepts about the phenomena of life during the Ancient and Medieval Times.
- Renaissance (16th, 17th century). Vitalistic and Mechanistic view of the world.
- The Natural History during the period of the Enlightenment, Taxonomy (18th century).
- Biology as science, development of new branches. Transformation of the traditional concepts about life (19th century).
- The century of classical genetics, population genetics, theories about the origin of life, molecular biology (20th century).
- Biotechnology and commercialization of genetic material, Human Genome Project, Developmental Biology, technological developments in the 20th century.
- The post genomic era, bioinformatics and high-scale analysis technologies (21st century).



#### K019. History of Technology

Introductory course to the history and historiography of technological change. The emphasis is placed on the history of technology in modernity and, more specifically, on key examples of artifacts that were initially introduced as universal (steam engine, electric dynamo, electronic computer). Selected comparisons between modern and pre-modern technologies are also included.

#### K020. Introduction to Art History

This course is an introduction to art history through discussion of selected works, primarily paintings, sculptures and architectural monuments, from prehistory to the present. Cultural periods and works of art will be examined from many points of view, including style, meanings, artist's techniques and historical - social context. Students will learn to consider art as a creative action (or as the result of this action) aiming at the understanding of the world and the performance of thoughts and feelings. They will get familiarized with major categories of art (such as landscape, genre, narrative painting, portraiture) and also with key terms, conventions and institutions associated with western art. Among the objectives of the course is the abolition of prejudices through critical examination of works and finally the enjoyment of art.

#### K021. History of Economic Thought

Economic ideas of the ancient world and of the middle ages. Preclassical economic thought: mercantilism and physiocracy. The Classical school of economic thought: Smith, Ricardo, Say, Malthus, J. S. Mill. Socialism and K. Marx. The Marginalist school: Jevons, Walras and Menger. The neoclassical school of economic thought: Marshall, Edgeworth, Pareto, Fisher, Clark. Alternative approaches: The Historical school and Institutionalism. The Keynesian Revolution.

#### K022. Introduction to Psychology

The course offers a systematic introduction to the methodology, history and theory of psychology. The biological bases of behaviour and cognition are examined, as well as their ontogenetic development. Special emphasis is placed on the theory and methodology of cognitive psychology with detailed reference to perception, memory, learning and the production and comprehension of oral and written language. The second part of the course covers topics belonging to social and clinical psychology. It addresses issues concerning motives, feelings, conscience, as well as influences of society. Clinical research and the future of psychotherapy is discussed.

#### K023. Introduction to the Neurosciences

The epistemological plan of the neurosciences aims at exploring all parameters, from the microscopic to the macroscopic ones, that are related to the structure and the operation of the neural system and its relations with behavior. The course gives an introductory presentation of the historical and methodological problems of this inter-disciplinary field.

#### K024. Cognitive Science

Cognitive science is the ‘new’ science of the mind. It is an interdisciplinary field that examines cognition through the collaboration mainly between psychology and computer science (artificial intelligence), but also philosophy and the neurosciences. The course starts with a history of cognitive science that attempts to explain the circumstances under which the cognitive science program emerged and the problems and questions it addresses. The different methodologies used by cognitive scientists to investigate the mind are described, including the empirical, experimental methods of cognitive psychology, the neuro-imaging techniques of the neurosciences, and the use of simulation in artificial intelligence. The advantages and disadvantages of a mechanistic view of the mind are discussed and the phenomenon of consciousness is examined. The course ends with a discussion of some of the philosophical problems of cognitive science, such as the problem of intentionality and the problem of qualia.

#### K025. Ancient Greek Language and Literature

Intensive teaching of the ancient Greek language on the basis of representative texts (mainly by prose writers) from the 5th century B.C. to the 5th century A.D. (Herodotus, Thucydides and other historians, orators from Andodikes to Demosthenes, philosophers, such as Plato and Aristotle, writers of the hellenistic and roman period). These texts depict important aspects of the ancient civilization (ideology, economics, mythology, theology, politics, philosophy, mathematics, astronomy, physics, medicine, music etc.) and provide motivation for a deep study of this civilization and its diverse forms of survival.

#### K026. Elements of Logic and Set Theory

Algebra of sets. Relations, equivalence relations and order relations. Functions. Cardinal numbers. Informal fallacies. Propositional logic: truth-tables, tautological implications, formal proofs. Predicate logic: first-order languages, logical implications, formal proofs.

#### K027. Introduction to Mathematical Analysis I

Discussion of basic notions and presentation of the real line. Sequences, limits. Continuity of a function of a real variable. Differentiation and applications. Elements of integration. Methods of integration I.

#### K028. Introduction to Mathematical Analysis II

Methods of integration II, applications of integrals. Elements Analytic Geometry on the plane (conic sections) and in space. Elements of Linear Algebra and vector spaces. Discussion of basic algebraic theories and structures.

#### K029. Introduction to Newtonian Mechanics and the Theory of Relativity

Introduction to notions and techniques of classical Physics. In Newtonian Mechanics, emphasis will be laid on understanding Newton’s laws and the laws of conservation of momentum and energy. There will also be an introduction to the special Theory of Relativity and, mainly, the changes it has caused to measuring

procedures. For all of these, the mathematics needed are taught either in course K027 or by the instructors of this course.

#### K030. Introduction to Thermodynamics and Electromagnetism

Elementary notions of electromagnetism. The laws of Coulomb, Ohm and Gauss. Faraday's experiments. The idea of electrical field. General review of Maxwell's equations. The character of thermal phenomena and the laws of Thermodynamics. Attempts for analysing thermal phenomena with methods of classical mechanics. Elements of statistical mechanics.

#### K031. Principles of Economics I

Methodological foundations of economics. The branches of economics and basic economic assumptions. The production possibility curve. The goods markets: demand, supply, equilibrium and the concept of elasticity. Consumer theory. Economic systems: market, mixed and planned economies. Theory of the firm. Market structures: perfect competition, pure monopoly, imperfect competition, oligopoly. Factors of production. Elements of welfare economics.

#### K032. Principles of Economics II

The scope of macroeconomics. Basic macroeconomic concepts and the circular flow of income. Aggregate demand and supply. Classical and Keynesian theories. Determination of national income. Consumption and savings' functions. Investment, government expenditure, exports and imports. Multipliers and fiscal policy. The money market and monetary policy. Unemployment and inflation. The Phillips curve. Neo-Keynesian and neo-classical approaches. International trade. Theories of economic growth.

#### K033. Introduction to the Social and Human Sciences

This introductory course aims at providing an overview of these sciences that seek to examine economic and social behaviour: economic and social sciences are thus conceived, not only in terms of their historical development, but also in identifying the specific reasons that contributed to their emergence and formation as independent academic disciplines. In this respect, the principal concepts as well as the main problems of each one of them have to be specified. Particular emphasis will be attributed to Economics as the most elaborated, typical and formalized social science, by delineating its object and methodology. The mainstream scientific trends, traditions and schools of thought in Economics, are also of primary importance.

#### K034. Biology

- Biology as a science (Short historical perspectives of Biology). Basic characteristics of life.
- The chemistry of life (Hierarchy of molecular organization of the cell. Biological macromolecules, structure and functions).
- Energy and metabolism (Laws of Thermodynamics. Biosphere. Biological system, Flow of energy in biosphere, in the cell. Flow of information in the cells and in the cell per se. Cellular metabolism. Metabolism regulation).

- Cell, structure and functions (Cellular theory. Prokaryotic and Eukaryotic cells. Biological membranes. Cellular organelles. Nucleus). Cell cycle (Stages and Regulation of cell cycle. Cell division. Cell death).
- Genetic Material, DNA (Structure and functions of the DNA). Flow of genetic information.
- Genetics (Mendel and Classical Genetics). Mutations (Repair mechanisms).
- Prokaryotic microorganisms, viruses (Microorganisms as tools for basic and applied biological research). Gene Regulation. Molecular Biology.
- Biotechnology (Technology of Recombinant DNA. Transgenic Technology).
- Tissues, Organs, Systems (Structure and functions of the nervous and immunological system).
- Evolution of Life (Concepts about the evolution of life in the pre-Darwinian period. Darwin and natural selection. The new synthesis).
- Contemporary Issues of Biology (Human Genome Project and Genome Projects for other model organisms. Bioenergy). Technologies and applications of contemporary Biology (Genomics, Proteomics. Bioinformatics, Technology of Stem cells (SC), In-vitro Fertilization (IVF), Gene Therapy, Cloning).
- Ecology (Historical perspectives. Basics in Ecology).

#### K035. Statistics

- Descriptive Statistics: Graphical methods for presenting statistical data. Measures of central tendency, variance, asymmetry, skewness.
- Elementary probabilities. Total probability theorem and Bayes' formula (theorem). Discrete and continuous distributions: Poisson, binomial, normal. Mean value and variance, coefficient of variation.
- Confidence intervals and hypothesis tests for the parameters of a normal population and two independent normal populations.
- Linear regression of data using the method of least squares.
- Contingency tables.  $\chi^2$ -goodness-of-fit.  $\chi^2$ -independency.

### Elective-Compulsory Courses

#### Φ101. Philosophy of Science I

Philosophy of Science emerged as a distinct field of philosophy in the twentieth century, mostly through the work of the Logical Positivists. The course will be devoted to the presentation of the so called "received view of scientific theories", shaped by the logical positivists, but also to the presentation of other contributions by philosophers who criticized and eventually shattered this picture. In particular, apart from the work of the positivists, such as Carnap, Neurath and Schlick, we will study the work of Popper, Lakatos, Kuhn and Feyerabend as well as more recent developments which highlight a sociological perspective. The topics that will concern us in the course of this historical presentation are the demarcation of science from metaphysics and pseudo-science, the distinct character of scientific research, the evaluation of scientific theories, the relation of observation to theory,

the way science develops, the rationality of scientific knowledge, the character of the scientific community and the relations between science and society.

#### Φ102. Philosophy of Science II

Characterisation and justification of scientific method. The problem of induction. Theories of confirmation. Models of scientific explanation. Causation. What are the laws of nature? The problem of theory-change. Realism, instrumentalism and empiricism. Naturalised philosophy of science. Objectivity and relativism

#### Φ103. Philosophy of Law

A seminar which follows the topics covered in the Legal Theory course and approaches in greater detail topics like the clash between the democratic and the liberal principles, social justice and efficiency, individual vs. the community. We will also give great emphasis to the legal regulation of morality and the problem of self-ownership, discussing a series of special topics like abortion, surrogate motherhood, euthanasia, same-sex marriage, pornography, freedom of speech, etc.

#### Φ104. Aesthetics

Central issues in aesthetics are discussed, such as the nature of aesthetic properties, aesthetic value, the objectivity of aesthetic judgment, the nature of aesthetic experience, the interpretation and evaluation of works of art, definitions of art, the nature of representation, etc.

#### Φ105. Logic

This course extends the compulsory course in logic. We shall mainly deal with the predicate calculus (otherwise known as quantification theory): we shall see what first-order languages and first-order theories are, learn some proof techniques (following either the method of natural deduction or the so-called method of trees) and train in translating from Greek into the symbolic idiom of the predicate calculus and conversely; the completeness theorem will be mentioned. We shall then deal with modal logic (that is, the logic of the notions of necessity and possibility) learning the main features of various systems there.

#### Φ106. Philosophical Texts

The course aims at familiarizing students with classical texts in the history of philosophy so that they have a first hand experience of how philosophy is and has been practised. They will discuss the problems dealt with in the texts, the concepts used and they will evaluate arguments and theses. They will take into consideration the relevant secondary literature and assess the text's impact.

#### Φ107. Applied Ethics

A systematic introduction to the issues discussed in the main areas of contemporary applied ethics, including bioethics, medical ethics, environmental ethics, business ethics and the ethics of war. The course focuses on the analysis of various problems and dilemmas of private and public life, such as cloning, euthanasia, abortion, organ transplants, the protection of the environment, the death penalty, marketing, pornography and the freedom of expression. The approach adopted involves the critical presentation and assessment of opposed theses and arguments, draws

on the resources of the most important normative moral theories and involves a philosophical consideration of the relations among ethics, law and politics.

#### Φ108. Plato and Aristotle

The course aims at studying Plato and Aristotle's ethics, epistemology and metaphysics, through analysing in a systematic manner texts of these philosophers, including the following: (Plato) *Gorgias*, *Protagoras*, *Republic*, *Theaetetus*, (Aristotle) *Categories*, *Prior Analytics*, *Nicomachean Ethics*, *Physics*.

#### Φ109. Rationalism - Empiricism

The course provides a thorough-going comparative reconstruction of the theories of the main rationalist and empiricist thinkers of the 17th and the 18th centuries, based on the study of passages of basic texts respectively by Descartes, Spinoza and Leibniz, and by Locke, Berkeley and Hume. It proposes a critical analysis of the contrary epistemological claims put forth by the above philosophers and an account of their metaphysical implications. It aims at a systematic assessment of the rationalist - empiricist controversy from the point of view of Kantian and post-Kantian transcendental philosophy and in the light of contemporary developments in the areas of epistemology, the philosophy of language and the philosophy of mind.

#### Φ110. Analytic Philosophy

A historical and systematic introduction to analytic philosophy focusing on the following issues: Criteria of identification and demarcation of analytic philosophy. Influence of Neo-kantian trends. The philosophy of thought and language in Frege. Moore's critique of idealism and skepticism. Moore's moral philosophy. Russell's theory of descriptions and logical atomism. The early Wittgenstein and the *Tractatus Logico-Philosophicus*. Theories of Meaning. Logical Positivism and the critique of metaphysics. The philosophy of ordinary language. Pragmatism and empiricism in Quine. Wittgenstein's late work. Scepticism about meaning. The new theory of reference. The naturalistic turn. Contemporary developments in the philosophy of language and the philosophy of mind.

#### Φ111. Medieval Philosophy

A historical and systematic account of the central topics of Western Medieval philosophy. Issues such as the relations between faith and Reason, the main arguments for the existence of God, the problem of universals, as well as debates in the areas of moral and political philosophy, are discussed on the basis of a close reading of texts by philosophers and theologians, including, Saint Anselm, Saint Thomas Aquinas, William of Ockham and Duns Scotus. The course also deals briefly with the influence of Platonism and Aristotelianism in the Middle Ages, the exchanges between Christian and Islamic thought and the parallel development of Byzantine philosophy.

#### Φ112. Economics and Law

The course aims at analyzing the methodological bases of the co-operation between Law and Economics for solving social regulating problems. The first part presents the methodology of Law and Economics in the framework of a general systematics of the sciences, as well as the object of study and the basic notions of each science.

The second part concerns the methodological bases of the Economic Analysis of Law and its basic theorems, using tools of positive and deontic Economics.

#### Φ113. Continental Philosophy

A historical and systematic introduction to the main currents of German and French philosophy of the twentieth century, including phenomenology, existentialism, the Frankfurt School, structuralism and post-structuralism, eventually focusing on the critical analysis of the works of postmodern thinkers, such as Foucault, Derrida and Lyotard. The course is based on the study of a variety of texts and proposes an overall assessment of the influence of continental philosophy in the study of the humanities and the social sciences.

#### Φ114. Philosophy of Mathematics

Philosophy of Mathematics until Kant. Introduction to the foundation of theories, with emphasis on set theory. Paradoxes (set-theoretic and semantic). Philosophy of Mathematics in the 20th century (Logicism, Formalism, Intuitionism).

#### Φ115. Philosophy of Physics

Concise analysis of the concepts of space and time from Aristotle to Kant. The absolute view of space and time (Newton). The relational view of space and time (Leibniz, Berkeley, Mach). Substantivalist versus relationist theories of space: The Newton - Leibniz debate in relation to the nature of space. The transcendental reasoning of Kant. The relativistic view of space and time (Einstein versus Lorentz). From space and time to space-time: Special theory of relativity. Philosophical problems in special relativity. Integration of space-time with motion and matter: General theory of relativity. Relativity and realism. Epistemological relativism and relativity theory. Natural geometry of space and conventionality (Poincaré, Reichenbach, Grunbaum). Conventionality and distant simultaneity. Causality in relativity theory. Space-time substantivalism and the hole argument.

#### Φ116. Philosophy of Biology

In this course, we will examine a range of major topics in the philosophy of biology. We focus on conceptual issues concerning the theory of evolution, its scientific status and the debate between evolutionism and creationism. Then we will discuss questions concerning fitness, the role of genes in determining the behavior of organisms, adaptationism, the concept of biological species, the units of selection, the nature of complexity, sociobiology, biological laws and the nature of evolutionary explanations, teleological explanations, the reducibility of biology to physics, etc.

#### Φ117. Philosophy and Methodology of Economics

The course consists of the following parts:

- Basic methodological concepts.
- Methodological development of social sciences.
- Contemporary approaches to the methodology of social sciences.
- Development of economic methodology: Classical, Historical and Neoclassical Schools.
- Contemporary economic methodology: Robbins, Keynes, Friedman, Samuelson.

- Value judgments and economics.
- Contemporary philosophy of science and economics: Popper, Kuhn, Lakatos, Laudan.

#### Φ118. Philosophy of History

The course is concerned with history, both in the sense of *res gestae*, i.e., the course of events in the past, and in the sense of *historia rerum gestarum*, i.e., the historical account of the events. We will, respectively, study the so-called speculative philosophy of history -where we examine questions such as the meaning and the end of history, factors and patterns of historical development- and the so-called critical or analytic philosophy of history - where we examine questions such as the objectivity of history, the role and significance of historical narrative, the difference between explanation and interpretation, historical understanding, what is a historical fact, the significance of history and the significance of differences between historical accounts. References will be made to the work of St Augustine, Vico, Kant, Herder, Hegel, Marx, Croce, Dilthey, Collingwood and other, more recent thinkers of the 20th century.

#### Φ119. Kant

A systematic introduction to Kant's philosophy, from the precritical to the critical period. The course concentrates on the main tenets of transcendental idealism developed and defended in the three Critiques, but also covers important theses and arguments put forth in some of Kant's short essays in moral and political philosophy and the philosophy of history. The discussion is based on the careful analysis of key passages and extends to a consideration of Kant's legacy in the history of modern and contemporary philosophy.

#### Φ120. German Idealism

A comprehensive account of the development of German idealism from Kant to Hegel. The course focuses on the positions and arguments of thinkers who first criticized the main tenets of Kant's philosophy and tried to develop his insights in novel ways in the areas of epistemology, metaphysics, ethics and aesthetics, including Fichte, Schelling and Hegel. The discussion also draws on the parallel study of texts by writers and poets of this period, such as Holderlin, Schiller and Goethe.

#### Φ121. Philosophical Logic

Issues about the logical properties of various kinds of expressions in natural languages, issues about non-classical systems of logic, as well as metaphysical and epistemological questions about logic, all fall within the range of this course. The first group of issues includes the following: is "exists" a predicate? the logic of indicative conditionals; statements about what is necessary and what is possible; the logic of subjunctive conditionals; theories about the logical features of vague concepts. In order to tackle those problems, we frequently need to make use of ideas from the philosophy of language. The issues that concern non-classical logics include the following: intuitionism; free logic; quantum logic; are there true contradictions? Finally, the metaphysics and epistemology of logic comprise issues such as these: if a logical principle is correct, what makes it correct, the world or our



conventions or something else? how do we know (if we do) that a given logical principle is correct? problems involving the concept of truth (such as certain paradoxes). Whenever the course is taught, a choice will be made from among all those topics.

#### I201. Scientific Revolution

The purpose of this course is to introduce students to the history of Scientific Revolution and to offer them a rough sketch of the period and the processes that gave birth to modern science. Conventionally, we take Scientific Revolution to cover the period, which starts with the emergence of the Copernican astronomy and ends with the Newtonian synthesis. However, part of the course deals with the developments in the late Medieval centuries and discusses the intellectual atmosphere as a result of the rediscovery of the Aristotelian philosophy and the emergence of the universities. Subsequently, we turn to the Renaissance and discuss the intellectual and social conditions, which boosted the reconstitution of the world image, and offered the ground upon which the ideas of Kepler and Galileo flourished. We continue with the mechanical philosophy and the examination of the new ideas concerning the course of natural phenomena and the functions of the human body. The course concludes with a detailed presentation of the Newtonian mechanics and the examination of the way such developments helped the new natural philosophy integrate with the new cosmology into a consistent whole.

#### I202. History of Science in Antiquity

The course explores some major themes in mathematics, astronomy, and natural science that were developed in ancient civilizations, with emphasis in ancient Greece. Among the covered topics are those indicated in the following list: Mathematics and astronomy in Egypt; mathematics and astronomy in Mesopotamia; the panorama of Greek mathematics; the emergence of the concept of the mathematical proof; Greek astronomy; ancient cosmologies and the theory of motion; the commentating tradition and the sciences in the period of Late Antiquity.

#### I203. Introduction to Historiography

The aim of the course is to discuss certain of the problems that concern the way we deal with the history of sciences. The course starts with a brief review of the history of the history of sciences and then it will focus on the analysis of the kind of questions posed by historians of science and the evidence and archives they use to answer them. During the course, different approaches towards the Scientific Revolution of the 16th and 17th centuries will also be discussed, as well as the modern tendencies in the historiography of science, which focus on the study of laboratories, scientific disputes and topics from the most recent history.

#### I204. History of Logic

Logic of Aristotle and his students (Theophrastus). The Logic of the Megarians and the Stoics. Logic during the Roman and Medieval period. Logic after the Renaissance (Leibniz, Bolzano and Mill). Algebraization of Logic (Hamilton, DeMorgan, Boole, Venn). Cantor's set theory and Frege's work. Russell's theory of types, ενορατισμός του Brouwer's intuitionism and Hilbert's programme. The work

of Gödel.

#### I205. Greek Science in Modern Times

For a long time, the study of the modern Greek science was a rather marginal academic field. The aim of this course is to show how the Greek-speaking scholars of the 18th and 19th centuries contributed to the philosophical and the scientific thought of their time. We scrutinize the extended literature on the so-called neo-Hellenic Enlightenment and discuss texts, which relate to the establishment of the modern Greek nation state. Occasionally, we turn to the original texts of the 18th and 19th century scholars, and we try to place their contributions in the broader context of their contemporary European thought. The ambition of the course is to help students reassess the work of the Greek-speaking scholars and to exemplify the importance of the study of the scientific thought in the periphery for the discipline of history of science.

#### I206. History of Scientific and Technological Policy

Introduction to the emergence and development of (national and international) state and business institutions and practices that affected technology and science in recent centuries. The course is focused on the post-World War II decades. Examples discussed: activities of executive, legislative and judicial authorities, firm and inter-firm actions, initiatives of scientific and professional institutions (societies, clubs, associations, councils, chambers etc.), the place of regulatory and standardization institutions, the role of award and patent related institutions.

#### I207. History of the Sciences and the Techniques in Modern Times (18th-20th centuries)

The focus of this course may vary, in the sense that such an extended period cannot be covered at once. A central issue will be the study of the developments that follow the Scientific Revolution, as well as a comprehensive presentation of the sciences during the Enlightenment. In this respect, an important goal of the course is to examine the spread and the fate of Newton's theories and to examine the various new disciplines, which formulated on the basis of an idealized perception of Newtonian physics. This process brings us to the 19th century: The concept of energy displaces the concept of force and thermodynamics takes over the conservation laws, which by that time bore strong theological connotations. At the same time, the notions of science and of "scientist", in their contemporary meaning, come into being. The steam engine and the development of chemical and electric industry bring forth the interplay between the natural sciences and technology. In the last section of the course an attempt will be made to examine some aspects of this interplay during the 20th century, as it takes place, for example, in the emergence of computer science, the construction of the atomic bomb and the rearrangement of the natural sciences after World War II.

#### I208. History of Astronomy

This course offers an introduction to the history of Astronomy as the history of human endeavors to observe and understand celestial phenomena. Our goal is to introduce the major people and events in the History of Astronomy from the

Babylonian and Ancient Greek area to the end of the Scientific Revolution and the triumph of Celestial Mechanics, and present the transformation of our understanding of the world. This is not a science course and our goal is not to teach you Astronomy. So the technical part is limited only to the introduction of the scientific concepts that played an important role in our understanding of the Universe. Our approach explores the close relation of the progressive development of the scientific understanding of Cosmos, with the role of culture, politics, and religion in the scientific debates in order to highlight the human aspect of Astronomy. The course will not survey all of the history of astronomy, but only major episodes placed in their historical context and introduced in a fairly chronological sequence. Topics: Egyptian and Babylonian Astronomy - Ancient Greek Astronomy - Ptolemaic Astronomy and Cosmology - The Copernican Revolution - Tycho Brahe and Kepler - Galileo - Newton - The Triumph of Celestial Mechanics.

#### I209. History of Experiments

Famous experiments of genuine scientists (Galileo, Toricelli, Newton, Young, Fresnel, Galvani, Oersted, Ampere, Faraday, Carnot, Laplace, Joule, Rutherford, Plank etc.). Historical, economical and cultural background. Their past and their technological results. The role of these experiments in foundation of main theories.

#### I210. Science, Technology and Society: Technology and Development

The course maps critical approaches to the science, technology, and society relationship, which come from a range of disciplines and interdisciplinary fields, including the history, sociology, anthropology, and philosophy of technology and science. Included in the topics covered is the connection between technology/science and economic issues (e.g., work and unemployment, development and pollution), ideological issues (e.g., national and gender identity construction), and political issues (e.g., peace and war, democracy and totalitarianism).

#### I211. Elements of Technology

The course covers the following themes: The tool-machine demarcation. Devices. From machines to circuits and networks. Basic mechanical, electrical and electronic arrangements. Introduction to representative technologies. The key case of information and related technologies. Adjusting technology in use. Introduction to the technical vocabulary. Classes of technical drawing and other technical representations. Reading and writing technical texts. Technology in the web.

#### I212. History of Economic Thought in the 20th Century

The course consists of the following parts:

- Theory of the firm: Chamberlin, Robinson, Sweezy.
- Keynesian Economics: the Hicks-Hansen IS-LM approach, economic policy, Keynesian theories of economic growth.
- The Chicago School: Friedman and Monetarism, Coase and property rights, Becker and household behaviour, Lucas and the theory of rational expectations.
- Non-Mainstream Schools of Economic Thought: Neo-Institutionalism. Post-Keynesians, Neo-Marxists.

### IΦ01. Artificial Intelligence

This course aims to provide the students with adequate knowledge on Artificial Intelligence issues and the respective solving methods. The course presents all the fields and the most important applications of Artificial Intelligence (AI), as also the programming tools that AI uses.

- Basic Concepts of AI: problems' representation and solution, search algorithms, knowledge representation, reasoning.
- Applications of AI: expert systems, neural networks, agent systems, natural language apprehension, machine vision, robotic.
- Practice Teaching: the PROLOG programming language, basic concepts and applications' development.

### IΦ02. Psychology of Cognition

The course examines systematically the theories of psychology dealing with the understanding of the processes of thinking, problem solving and learning. How do humans think? Is there rationality in human thought and what is the relation between logic and the psychology of thinking? What is the role of models of thought and when do humans use pictorial representations to solve a problem? The processes of induction, abduction and thinking by analogy are examined. The role of analogies in problem solving, in learning and in discovering. The importance of pre-existing knowledge and the theories about knowledge representation, categorizing, the formation and development of concepts and conceptual change. Examples are used from the area of learning and problem solving in the natural sciences and mathematics.

### IΦ03. History of Psychology

The philosophical beginnings of psychology. The development of physiology and the problems of reductionism. Wundt and the psychology of consciousness. Freud and psychoanalysis. Darwinism and its effects on psychology. Behaviorism. Cognitive psychology and cognitive science. The development of applied psychology. Problems and challenges of contemporary psychology.

## Elective Courses

### 056. Special Topics in European History

The subject of this course covers the medieval period of Western Europe (5th - 15th century). Principal purpose is the understanding of fundamental institutions, such as the Empire, the feudal relations, the "peace of God" (Pax Dei), which shaped the western medieval state forms and consequently the medieval civilization. On completion of this course, students should be conversant with the institutional history of the western medieval Europe and able to investigate the European institutional evolution in the next centuries.

### 116. Longinus' "On the Sublime" and Modern Literary Criticism

Introduction to the ancient literary theory and the rules of creative writing in classical and [postclassical antiquity (Greek and Latin). The notion of style from antiquity till nowadays. Analysis of Longinus' treatise "On the Sublime" and of

its philological dimensions (authorship, dating, structure of contents, stylistic documentation, influencing European criticism). Common places and theoretical reflections upon modern criticism, which are latently located in Longinus' treatise, as well as in related works (Aristotle, Dionysius from Halicarnassus, Horace, Cicero, Dimitrios the rhetor, and other).

### 133. Greek Painting of 19th and 20th Centuries

This course presents the development of Greek modern painting from its beginnings in the Ionian Islands to the present. Special attention will be given to the contributions of those painters who studied art in Munich Academy during the 19th century but also to those who went at the end of this century to Paris and brought new influences to Greek painting. Although 19th century Greek painters seemed to be quite conservative and followed mainly academic styles, at the beginning of the 20th century they turned their attention to landscape painting and studied the effects and skills of light and color. Students will learn about the artists of the first half of the 20th century, who have been influenced by impressionism and also about those, who are called "Generation of the 30's" and managed to combine avant-garde ideas with Greek tradition. The course closes with the examination of abstraction and other tensions in Greek painting, which often combine western and traditional characteristics.

### 134. Comparative Education and International Educational Policy

The aim of the course is a) to increase student awareness on aspects of policy making including actors, processes and policies, b) to improve their ability to analyze comparatively and to understand the dynamics of educational change worldwide, and c) to provide information concerning the education systems in Greece, England, France and Holland with special reference to higher education. Content:

- Public interest in the foreign systems of education
- The comparative argument in policy making
- The aims of Comparative Education
- The methodology of Comparative Education: the historical and scientific approaches
- Education in Greece, England, France and Holland
- The university: a comparative study of its ideological and institutional transformation.

### 147. Special Topics in Philosophy of Psychology

During this course we examine a variety of philosophical problems that surround the attempt to understand the nature of consciousness, e.g., qualia. We also attend to research from the field of neuroscience that is relevant to this venture, e.g., blindsight, synesthesia etc.

### 152. Special Topics in Moral, Political and Legal Theory II

This workshop is conducted over two sequential semesters. Most of its participants are faculty and graduate students from various institutions.

### 155. Modern Art

This course is a survey of major movements and trends in the history of modern art. Beginning with Impressionism and Post-Impressionism, students will follow the developments in visual arts through Cubism, Fauvism, Expressionism, Futurism, Dadaism and Surrealism. Finally, they will study the most important movements in post-war American and European art and explore critically various avant-garde methods used since 1960, when artist's scopes and practices radically changed. Special attention will be given to major artists, (i.e. Picasso, Klee, Kadinsky, Matisse, Modrian, Duchamp, DeChirico, Pollock, Kosuth, Warholl) and to the discussion of central topics such as "Is this Art?", "Do traditional elements survive in revolutionary works of art?" and "Did modernist Art failure?".

#### 164. Methodology and Philosophy of Informatics

An introduction to the history of computers. Internet and the Information Society. The diffusion of computing and communication technologies and the digital divide. Digital economy and e-government. Digital libraries and information retrieval. Philosophical questions in computer science and artificial intelligence. Computing methodologies.

#### 165. Special Topics in Informatics

This course refers to topics concerning computational modelling, and especially the simulation of discrete systems. We examine the ways for analysing a real system and the information it provides, in order to represent it computationally, either as a monotone system or a probabilistic one. We examine also the results of the experimentation over the simulated system and the real profit that we could obtain by analysing these results.

#### 167. Logic in Programming

This course examines at a practical level the special relationship that exists between Mathematical Logic and Computational Logic. We analyse the usual utilizations of logic elements in both Algorithmic and Logic Programming comparatively. We make use of the basic elements of two corresponding programming languages introduced in this course, namely Scheme and Prolog. In this course, our aim is to better clarify the logical possibilities of programming.

#### 170. Knowledge Management

Knowledge has always been the necessary substratum for any effective use of the traditional means of production, land, labour and capital and in parallel of any economic and social transformation process. Recently a new emphasis has given to knowledge due to its significance for the newly developing sectors of economy especially those focusing in providing services. The knowledge in today's post-industrial era has to follow specific patterns of application. It is highly formalized (methodologies for knowledge capturing and codification, systematic classification of knowledge by means of ontologies, available for utilization by computers, representation, etc) and leading necessarily to the study of knowledge per se with respect to its usefulness in economy, in other words to the development of a new knowledge field, a meta-knowledge field about knowledge concerning of economic resources and social issues. Through out this module students will review and evaluate in

depth the existing concepts and methodologies for effective knowledge management. After the successful accomplishment of the module students will be fluent in the usage of CommonKads methodology and they are going to be familiar with the methodologies and technologies used in the area of the Semantic Web (kif, rdf, owl, protege etc).

#### 171. Special Topics in History of Technology

Computing, Telecommunications, Biotechnology. Topics covered: the analog-digital debate, the emergence and establishment of the software-hardware demarcation and the persistence of a software crisis, the transition from the ideal of a computer utility to the realities of personal computing, the history of human computers, the transition from the computer being a mathematical machine to the computer being a communication device, continuities and discontinuities from the history of the telegraph to the history of the internet, early histories of biotechnology, the hegemony of molecular biology and changes in the orientation of biotechnology, the convergence of computing, telecommunications, and biotechnology, the emergence of nanotechnology.

#### 172. Special Topics in History of Mathematics

The course explores various topics of the history of mathematics, and emphasizes developments that took place in Europe, in the period from 1500 to 1800.

#### 173. Introduction to the History of Medicine

The course aims to give provide an overall picture of the historical development of medicine, within the context of the history of science, and mainly from the viewpoint of a history of ideas and concepts. More specifically we will focus on:

- Approaches to the historiography of medicine and related problems.
- Main periods of the history of medicine (from ancient Greece to the 20th century) and main characteristics of each period.
- Historical development of some central concepts in medicine, such as concepts of health and disease, ideas about the function of the human organism, the role and characteristics of medical treatment, the mode of action of drugs.

#### 176. Special Topics in History of Medicine

The course aims at a more detailed and thorough examination of a special topic from the history of medicine. We will focus either on a particular time period (e.g. Ancient Greek medicine, Renaissance medicine), or on the historical evolution of a particular aspect of medicine (e.g. The development of ideas on health and disease). The topic as well as the names of colleagues who will participate in teaching will be announced before the beginning of the semester.

#### 177. Theories of Law and Justice

This is an advanced course, which presents critically classical and modern theories of law and justice with a simultaneous focus on the thinkers that produced them and the specific problems they touched upon. The course is divided into two main parts. During the first part, we start by examining natural law theory and its opposition to legal positivism, and then proceed to the so-called continental philosophy of law, namely Kant, Hegel and Marx, trying to understand their views

about the nature of law, liberty and equality, and the relation between state and individual through the fundamental distinction between public and private sphere. Finally, we examine two modern theories of justice, i.e. Rawls's political liberalism and Nozick's libertarian alternative. In the second part, the course will be based on students' presentations of contemporary problems: the security/liberty conflict, discrimination and affirmative action, freedom of speech (e.g. Muhammad's cartoons), multiculturalism (e.g. the ban of Muslim headscarves in France), and the philosophy of penal law (e.g. euthanasia, abortion etc).

#### 178. Special Topics in Philosophy of Social Sciences

A graduate seminar offered to advanced undergraduates, which introduces students to rational choice theory, game theory and strategic thinking with references to the literature on behavioral economics, altruism, social norms and negotiation.

#### 181. Special Topics in Philosophy of Mathematics

- The status of natural numbers as logical *objects* in philosophy of Frege.
- The status of natural numbers as 1) *properties* of natural collections in Mill's empiricism 2) *properties* of sets in Maddy's naturalistic realism.
- Ontology of natural numbers: are numbers independent of mind *entities* or *inventions*? (the 'arithmetical realism' issue).
- Field's fictionalism: natural numbers as *fictions*.
- Indispensability arguments in philosophy of arithmetic: Numbers are *indispensable* to our best scientific theories (Quine-Putnam).
- *Semantics* of arithmetical language. Wright's argument in favour of arithmetical platonism.
- The problem of arithmetical *knowledge*. Is it a priori or a posteriori? How can numbers be known?
- Versions of arithmetical *structuralism*.

#### 183. Institutions and Economy

The purpose of this course is to present the theory of institutions and of institutional change, focusing on economic institutions and the way they change. A thesis will be supported according to which any serious study of economic phenomena requires the analysis of institutions, which surround these phenomena. The analysis will examine the concept and nature of 'institutions', their difference from 'organisations', the way they affect transaction and production costs and finally, their contribution to economic development through the cooperation of human beings. Given the conceptual framework, this series of lectures will deal with issues such as markets functioning and how the existing institutions determine their operation. The role of human behaviour in its effort to achieve economic efficiency through economic action will be reexamined and the concepts of Homo oeconomicus and Homo sociologicus will be redetermined. Treating 'political economy' as a system of ideas which provide a systematic coverage of the institutional environment in which economic agents act, the neoclassical economic theory and the relative conceptual framework is restated, giving special attention to hypotheses related to the behaviour of these economic agents.



#### 184. Special Topics in History of Economic Thought

The course discusses different topics in the history of economic thought each time it is offered. Topics that have been discussed in the past: The influence of Positivism in the history of economic thought. Kuhnian scientific paradigms and schools of economic thought. Biblical economic thought. The Salamanca School. Ancient economic thought. The concept of happiness in economic thought.

#### 186. History of Art I

This course is a close examination of the development of Italian Renaissance Art with special attention given to the contributions of the major artists. A chronological approach will be practiced, beginning with the artists of the Duecento and Trecento being seen as “precursors of the Renaissance”, continuing with the Quattrocento labeled as the early Renaissance and closing with the Cinquecento known as the period of mature High - Renaissance and the Mannerism. Thematic topics will also be discussed, such as the role of antiquity, the development of individual, the social status of the artist, the power of patrons and church, the collaboration of artists and scientists etc. Students will familiarize with Italian Renaissance Art by analyzing important works, examining critically the causes leading to this revival and learning about the social, political, historical and cultural circumstances.

#### 188. Critique of Pure Reason

The course provides a systematic study of the Critique of Pure Reason, beginning with a survey of the basic concepts of Kant's theoretical philosophy. It focuses on an analysis of exegetical issues concerning the proper construal of the main theses of transcendental idealism and of the role of transcendental arguments in their elucidation and defense. The approach adopted draws on a critical examination and a comparative assessment of alternative readings of the Kantian text put forth by contemporary scholars.

#### 197. Entrepreneurship and Development

This course approaches the concepts and the relative methodology of entrepreneurship, in line with the teaching standards applied to both local and foreign universities. In that way all participants develop basic entrepreneurial skills. To this end, concepts like uncertainty, risk, return, innovation and opportunity are dealt with. Although the course is addressed to students with a moderate economic background, teaching tools established by the economic analysis are used. So by the end of the course students are able to deal with the basic concepts and methodology necessary to construct a business plan. Teaching will be enriched with many examples from real economy. Also problems faced by enterprises and organization of both the private and the public sector are tackled.

#### 198. Introduction to Legal and Political Institutions

In this course the students are introduced to the basic principles of law and political science as well as to the leading theories of government and democracy. After an introduction to the modern Greek political and constitutional history, emphasis is given to Greek constitutional law theory. Basic institutions of Greek public and private law are also discussed, as well as the institutions of the European Union.

#### 199. European Union: Institutions and Policies

An introduction to the institutions and policies of the European Union and its internal organization and functioning. After a historical introduction which extends from the foundation of the ECC to this day, special emphasis is given to the presentation of European Union's organs and institutions, to the importance of the Common Market, as well as to the decision-making mechanisms of its bodies.

#### 200. Career Counselling and School Career Guidance

This course examines, at first, the concept of Career Counselling and the topics of Career Counselling. The different kinds of topics that interest clients are discussed, as well as the underlying problems and their importance for the career counsellors, the client-counsellor interaction and counselling skills. Then the stages of screening, contracting and exploring the problem are analyzed. The course also examines the use of tests, questionnaires and professional information, in order to help the client in the development of self-awareness, decision-making and action-taking. Emphasis is laid on the application of career counselling and guidance at school, taking into account the special needs of pupils for self-awareness, information, educational and professional choices and the transition from the school environment to the job market.

#### 201. History of Graphic Arts

Students are introduced to the history of graphic arts by examining mostly the development of lithography, etching, serigraphy, and typography. They get familiar with the techniques of the above disciplines, which have as common characteristic the artistic process of creating a design using a medium and transferring the image to a material. Students trace the origins of printing techniques in the Tang dynasty (7th century), where carved wood blocks were used as a way to inscribe thousands of sheets with a memoir of an Empress, through Gutenberg's typography in the mid 15th century, until all the modern processes of producing posters, books, newspapers etc. Special attention is given to the analysis of engravings, produced by important masters from Renaissance to our days, such as Duerer, Delacroix and Escher, while the relation between graphic design and some 20th century's movements, especially Art Nouveau, is also thoroughly examined.

#### 202. Art and Cinema

The purpose of this course is to offer a comparative study of visual arts and film through two different approaches. The first concerns biographies of visual artists as the subject of modern cinema, shown through both art movies and documentaries. The second refers to the influence of the avant-garde art scene of the first half of the 20th century on the innovative trends in cinema during its boom time. In the first part of the course the students will watch and analyze biographical films and documentaries, and will also be taught the elements of the biographical method in art history: the aim is to demonstrate the differences between scientific (history of art, documentary) and artistic approaches (film) to biography. The second part of the course investigates expressionistic and surrealist films as well as pre-war experimental films made by visual artists: the aim is to show the influence of visual artists on some filmmakers of the early 20th century who sought multiple expressive

outlets in their efforts to develop an innovative cinema scene.

#### 204. Special Topics in Economic History

In this course we will focus on the history of economic institutions, practices and behaviours. In conformity to the basic periods of European history, we will examine a set of issues pertinent to the socio-economic organisation of pre-industrial societies, such as economic demography and geography, rural and urban economy, organisation and operation of markets, the forms of economic activities, tax policies, work and gender, as well as problems of economic growth in pre-modern societies. Furthermore, issues of social stratification, economic inequalities and social welfare will be equally taken into consideration.

#### 208. Special Topics in the History of Medicine

The course aims at a more detailed and thorough examination of a special topic from the history of medicine. We will focus either on a particular time period (e.g. Ancient Greek medicine, Renaissance medicine), or on the historical evolution of a particular aspect of medicine (e.g. The development of ideas on health and disease). The topic as well as the names of colleagues who will participate in teaching will be announced before the beginning of the semester.

#### 215. Women in the History of Science

This course focuses on the history of women in science. This history is at first a history of absence and exclusion and later a history of marginalization of women from the 'official' sites of knowledge production. At the same time it is the history of the shaping of the notion of genre from science itself. The aim of this course is to study the place of women in different scientific fields from the early modern period until our days, as well as the ways in which the shaping of the notion of gender in specific cultural contexts has become one of the mechanisms of exclusion of women from science.

#### 217. Biological Concepts and Systems

The objective of the course is on the one hand to familiarise students with the subject and several basic concepts of biological systems, on the other hand to present and demonstrate the various modelling techniques and to study *in vivo* indicative experimental models. The course surveys the concepts and problems of systems theory as applied to biological problems with emphasis on modern and/or specialised subjects, such as self-organisation, autonomy, autopoiesis and behavioral emergence. The course also briefly presents some fundamental approaches and problems of behavioral and evolutionary biology that constitute systematic modelling targets, such as sociobiology and the species problem. At a practical level, a number of examples are given on modelling, experimentation and study with mathematical, computational and graphical methods, as well as a comparison and evaluation of the various methodologies.

#### 219. Special Topics on the History of Physics and Chemistry

The aim of this course is to study the rise of big science and its impact on scientific practice: on scientific institutions (Universities and Research Laboratories), on the

funding of the sciences, on their social function, and on their relations with industry and the military. A substantial part of the course focuses on the history of the atomic bomb, which signals the transition to big science.

#### 220. Special Topics in Contemporary Philosophy

In this course we present and discuss certain issues within Empiricism as they were developed in the 20th century. Emphasis is given in the issue of a distinction between the analytic and the synthetic and the scheme-content distinction (from the Vienna Circle to Davidson).

#### 221. Special Topics in Contemporary Human Resource Management

This course is concerned with human resource management (HRM) and the ways in which organizations manage their employees. We shall outline and explore particular aspects of HRM processes and practices, identify some of the major changes occurring within organizations and highlight the new challenges for HR management. These appear of particular importance in viewing HRM holistically through real-life cases that facilitate to understand how HR theory is related to workplace practices. Thus, we shall critically discuss a variety of specific issues, such as:

- HRM: the organizational context.
- Ethics and HRM.
- Entrepreneurship and HRM.
- Work-life balance.
- Meaningful work.
- Employee well-being.
- Managing occupational health and safety.
- Toward a participative and inclusive workplace: equality, diversity and dignity at work.
- The 'dark side' of organizational life: Organizational politics, bullying and discrimination.
- Intercultural aspects of HRM practices: workplace spirituality and Spiritual Leadership.

#### 222. History of Classical Scholarship

The history of the science of classical scholarship: its origin and formation in the Hellenistic times and through the ancient scholars of Alexandria, the philological 'schools' in later antiquity, Christian Church and classical studies, the Byzantine era, the scholars of Renaissance and Humanism, its flourishing epoch in modern Europe (Italy, France, Holland, England and Germany), the 19th and 20th centuries, modern Greek classical scholarship from the fall of Constantinople and forerunners such as Musurus and Korais, up to the foundation of the University of Athens (1837), Kontos and Sykoutris.

#### 223. Metaethics

The course comprises a systematic study of central semantic, epistemological and

ontological issues concerning the content and the normative function of moral concepts and of moral judgments. It provides a historical survey of the development of metaethics as a branch of moral philosophy in the analytic tradition, from the beginning of the twentieth century to the present. It focuses on the recent debate on moral realism and proposes an analysis of a variety of texts by contemporary philosophers, with a view to making possible a critical assessment of the main alternative positions, theories and arguments.

#### 1050. Special Topics in Moral, Political and Legal Theory I

This workshop is conducted over two sequential semesters. Most of its participants are faculty and graduate students from various institutions.

### 3.6 Courses on offer during Academic Year 2009-10

#### 1st Semester

Codes	Compulsory Courses	Instructors
K004	Introduction to Philosophy	Kindi
K013	History of Antiquity	Kalospyros
K022	Introduction to Psychology	Vosniadou
K025	Ancient Greek Language and Literature	Kalospyros
K027	Introduction to Mathematical Analysis I	Sagias
K033	Introduction to Social & Human Sciences	Vliamos-Gotsis

#### 2nd Semester

Codes	Compulsory Courses	Instructors
K001	History of Philosophy I	Ierodiakonou
K014	European History	Hatzioannou
K019	History of Technology	Tympas-Papanelopoulou
K020	Introduction to the History of Art	Gemtou
K028	Introduction to Mathematical Analysis II	Zachariades
K029	Introd. Newton. Mech. & Relativ. Theory	Trikalinos

#### 3rd Semester

Codes	Compulsory Courses	Instructors
K002	History of Philosophy II	Kalligas
K015	History of Civilization and Institutions	Hatzioannou
K023	Introduction to the Neurosciences	Moutoussis
K030	Introd. Thermodyn. & Electromagnet.	Trikalinos
K031	Principles of Economics I	Drakopoulos-Hatzis
K034	Biology	Haralambous

#### 4th Semester

<b>Codes</b>	<b>Compulsory Courses</b>	<b>Instructors</b>
K003	History of Philosophy III	Hatzimoysis
K006	Ethics	Virvidakis
K017	History of Physical Sciences	Arabatzis-Papanelopoulou
K026	Elements of Logic & Set Theory	Dimitracopoulos
K032	Principles of Economics II	Vliamos-Drakopoulos
K035	Statistics	Protopapas

#### 5th Semester

<b>Codes</b>	<b>Compulsory Courses</b>	<b>Instructors</b>
K009	Philosophy of Physical Sciences	Arabatzis
K012	Legal Theory	Hatzis
K016	History of Mathematics	Christianidis
K024	Cognitive Science	Moutoussis
<b>Codes</b>	<b>Elective-Compulsory Courses</b>	<b>Instructors</b>
Φ110	Analytic Philosophy	Manolakaki
Φ113	Continental Philosophy	Hatzimoysis
Φ114	Philosophy of Mathematics	Anapolitanos
I201	Scientific Revolution	Papanelopoulou
I204	History of Logic	Dimitracopoulos
I205	Greek Science in Modern Times	Patiniotis
I208	History of Astronomy	Dialetis
I210	Science, Technology and Society	Tympas
<b>Codes</b>	<b>Elective Courses</b>	<b>Instructor</b>
173	Introduction to the History of Medicine	Papadopoulos
1048	Special Education	Zoniou-Sideri
202	Art and Cinema	Gemtou

#### 6th Semester

<b>Codes</b>	<b>Compulsory Course</b>	<b>Instructors</b>
K007	Epistemology and Metaphysics	Stephanou
K008	Philosophy of Social Sciences	Gotsis-Hatzis
K018	History of Biology	Haralambous
<b>Codes</b>	<b>Elective-Compulsory Courses</b>	<b>Instructors</b>
Φ101	Philosophy of Science I	Karakostas
Φ102	Philosophy of Law	Hatzis

Φ104	Aesthetics	Nikolinakos
Φ118	Philosophy of History	Kindi
I202	History of Science in Antiquity	Christianidis
I206	History of Scientific and Technological Policy	Tympas
I207	History of Science and Technology in Modernity	Patiniotis
I209	History of Experiments	Trikalinos
<b>Codes</b>	<b>Elective Courses</b>	<b>Instructors</b>
050	Introduction to Linguistics	Kondos
134	Comparative Education and International Educational Policy	Matthaiou
136	Modern History of Universities	Maniati
160	History of Educational Policy	Glavas
164	Methodology and Philosophy of Informatics	Stefaneas
165	Special Topics in Informatics	Gyftodimos
208	Special Topics in History of Medicine	Papadopoulos
222	History of Classical Scholarship	Kalospyros
223	Metaethics	Virvidakis
224	Special Topics in History of Philosophy	Philippou

#### 7th Semester

<b>Codes</b>	<b>Compulsory Courses</b>	<b>Instructors</b>
K010	Philosophy of Language	Manolakaki
K021	History of Economic Thought	Gotsis
<b>Codes</b>	<b>Elective-Compulsory Courses</b>	<b>Instructors</b>
Φ102	Philosophy of Science II	Psillos
Φ115	Philosophy of Physics: Philosophy of Space and Time	Karakostas
Φ121	Philosophical Logic	Stephanou
<b>Codes</b>	<b>Elective Courses</b>	<b>Instructors</b>
079	Comparative Museology	Anapolitanos
084	Management of Historical Information	Dialetis
147	Special Topics in Philosophy of Psychology	Nikolinakos
155	Modern Art	Gemtou
167	Applications of Logic to Informatics	Gyftodimos
170	Knowledge Management	Mavroudakis
195	Entrepreneurship and Development	Vliamos
205	Career Counselling and School Career Guidance	Argyropoulou

215	Physical Sciences and Society in the 20th century	Gavroglu Arabatzis
216	Women in History of Science	Papanelopoulou
217	Biological Concepts and Systems	Tzafestas

### 8th Semester

<b>Codes</b>	<b>Compulsory Courses</b>	<b>Instructors</b>
K005	Political Philosophy	Paparigopoulos
K011	Philosophy of Mind	Nikolinakos
E100	Informatics (Laboratory)	Gyftodimos
E200	Essay Writing (Laboratory)	Kantzia
<b>Codes</b>	<b>Elective-Compulsory Courses</b>	<b>Instructors</b>
Φ106	Philosophical Texts	Kalligas
Φ112	Economics and Law	Hatzis
Φ120	German Idealism	Hatzimoysis
I212	History of Economic Thought in the 20th century	Drakopoulos-Gotsis
IΦ01	Artificial Intelligence	Tzafestas
<b>Codes</b>	<b>Elective Courses</b>	<b>Instructors</b>
100	Museology	Anapolitanos
116	Longinus' "On the sublime"	Kalospyros
172	Special Topics in History of Mathematics	Christianidis
181	Special Topics in Philos. of Mathematics	Christopoulou
183	Institutions and Economy	Vliamos
186	History of Art I	Gemtou
187	Special Topics in History of Medieval Science	Dialetis
204	Special Topics in History of Economic Thought	Merianos
218	Special Topics in History of Philosophy	Anapolitanos
219	Special Topics in History of Physics	Arabatzis-Papanelopoulou
220	Special Topics in Contemporary Philosophy	Manolakaki
221	Special Topics in Human Resources Management	Gotsis



## 4

# Programmes of Postgraduate Studies

## 4.1 History and Philosophy of Sciences and Technology

The Programme was approved by the Ministry of Education decree  $\Phi$ .711/B7/147/14-3-1996, which was replaced by decree B7/246/3-9-1998 and decree 40295/B7/17-6-2003. The Programme has been running since 1996, in co-operation with the Division of Human and Social Sciences and Law of the School of Applied Mathematical and Physical Sciences of the National Technical University of Athens (N.T.U.A.).

The Programme's object of study is the History and Philosophy of Sciences and Technology. The streams of studies available are: (a) Stream of History of Sciences and Technology, (b) Stream of Philosophy of Sciences and Technology.

The Programme aims at promoting research and furthering knowledge in the History, Philosophy and Methodology of Logic, Mathematics, the Physical Sciences, the Human and Social Sciences, as well as Technology. It also aims at improving the competitiveness of Greek researchers inside the European and more generally the world community.

The Programme awards Master's Degrees (M.Sc.), admitting, per year, up to twenty-five (25) students<sup>1</sup>. The duration of study is four (4) semesters at least and six (6) semesters at most.

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<sup>1</sup>Until the publication of Law 3685/2008, the Programme had been awarding Doctoral Degrees (Ph.D.), too.

The Programme admits graduates of all University Departments or Schools in Greece or corresponding Departments or Schools abroad, provided they satisfy the necessary conditions for successful attendance.

More information concerning the programme of studies, the courses offered etc. is provided by the Programme Secretary Mrs. P. Petropoulou, tel. +30 210 727 5518, *email* pepetrop@phs.uoa.gr, and at the Programme's website (<http://www.hpst.phs.uoa.gr/>).

## 4.2 Basic and Applied Cognitive Science

The Programme was approved by the Ministry of Education decree B7/459/25-9-1998 that was modified with decree 63536/B7/2003 and decree 138274/B7/6-4-2006. The Programme has been running since 1998, in co-operation with

1. The Department of Informatics and Telecommunications of the University of Athens
2. the Department of Nursing of the University of Athens
3. the Department of Philosophy, Pedagogy and Psychology of the University of Athens
4. the Department of Informatics of the Athens University of Economics and Business.

A central aim of the programme is the unification of computational approaches to cognition with research in cognitive psychology and the neurosciences. The subjects taught cover a large domain of several disciplines in the behavioural, neural and computational sciences. Particular attention is given to the study of processes of learning and the educational applications of Cognitive Science. In brief, the programme aims at the following:

- The more efficient interaction among the humanities, computer science, the biological and the social sciences.
- The development of systematic, basic and applied research for the purpose of advancing knowledge on issues pertaining to human cognition and learning.
- The improvement of the competitiveness of Greek scientific manpower in relation to the European and international community.

The Programme awards Master's Degrees (M.Sc.), admitting, per year, up to twenty (20) students<sup>2</sup>. The duration of study is four (4) semesters at least and six (6) semesters at most.

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<sup>2</sup>Until the publication of Law 3685/2008, the Programme had been awarding Doctoral Degrees (Ph.D.), too.

The Programme admits graduates of (a) Schools of Philosophy (b) Departments of History and Philosophy of Science (c) Schools of Science (d) Medical Schools (e) Departments of Pedagogy (f) Departments of Informatics and Polytechnic Schools or equivalent to one of these.

The selection of candidates is based on the following criteria:

- graduation grade
- performance in undergraduate thesis, when required for graduation
- grade in undergraduate courses, according to the area of study
- results of interview with the selection committee
- research activity in an area related to that of the Programme
- recommendation letters
- other postgraduate degrees.

More information concerning the programme of studies, the courses offered etc. is provided by the Programme Secretary Ms. K. Katsarou, tel. +30 210 727 5566, *email* kiki@math.uoa.gr, and at the Programme's website (<http://www.cs.phs.uoa.gr/>).

### 4.3 Logic and Theory of Algorithms and Computation

The Programme was approved by the Ministry of Education decree  $\Phi$ 711/B7/146/14-3-1996, which was replaced by decree B7/38/20-1-1999, which was modified by decree 14711/B7/29-1-2004. The Programme has been running since 1997, in co-operation with

1. the Department of Mathematics of the University of Athens
2. the Department of Informatics and Telecommunications of the University of Athens
3. the School of Applied Mathematical and Physical Sciences of N.T.U.A.
4. the School of Electrical and Computer Engineering of N.T.U.A.
5. the Department of Computer Engineering and Informatics of the University of Patras.

The Programme awards Master's Degrees (M.Sc.), admitting, per year, up to twenty (20) students<sup>3</sup>. The duration of study is a full calendar year at least and six (6) semesters at most.

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<sup>3</sup>Until the publication of Law 3685/2008, the Programme had been awarding Doctoral Degrees (Ph.D.), too.

The Programme admits graduates of Departments of Mathematics, Informatics and Computer Engineering, as well as graduates of other Departments of Schools of Science or Engineering.

The selection of candidates is based on the following criteria:

- graduation grade
- success and grades in a good number of undergraduate courses of mathematical content
- success and grades in a good number of undergraduate courses in Informatics or proof of good familiarity with Informatics
- recommendation letters, study proposal and research (pre)publications.

More information concerning the programme of studies, the courses offered etc. is provided by the Programme Secretary Ms. Ch. Chondrou, tel. +30 210 727 6417, *email* cchondro@math.uoa.gr, and at the Programme's website (<http://mpla.math.uoa.gr/>).

#### 4.4 Didactics and Methodology of Mathematics

The Programme has been operating since the academic year 2001-2 as Inter-Departmental ( $\Phi$ EK 575/B/12-5-2003), in co-operation with

1. the Department of Mathematics of the University of Athens, which runs the Programme,
2. the Department of Philosophy-Pedagogy-Psychology of the University of Athens
3. the Department of Mathematics and Statistics of the University of Cyprus
4. the Department of Education of the University of Cyprus.

The main goal of the Programme is the advancement of knowledge and the development of research on the Didactics of Mathematics. In particular, the Programme offers young scientists the opportunity to specialize, aiming at producing scientists able to contribute to the educational and economic development of our society. Furthermore, the Programme aims at creating postgraduate studies of an international standard, which could prevent a large part of our scientific potential from emigrating abroad to pursue similar studies.

The Programme awards Master's Degrees, admitting, per year, up to thirty (30) students. The duration of study is four (4) semesters at least and six (6) semesters at most.

The Programme admits graduates of Departments of Mathematics, Statistics, as well as other Departments of Schools of Science and Engineering, of Departments of Philosophy and History of Science, Departments of Philosophy and Departments of Education or equivalent Departments of Universities in Greece or abroad. Graduates of corresponding Departments of Technological Educational Institutes are also admitted, in accordance with the requirements of paragraph 12 of article 25 of Law 2916/01. In extraordinary cases, graduates of other Departments of Universities can be admitted, upon a decision of the Co-ordinating Committee of the Programme.

More information concerning the programme of studies, the courses offered etc. is provided by the Programme Secretary Ms. D. Bakogianni, tel. +30 210 727 6515, *email* dbakogianni@math.uoa.gr, and at the Programme's website (<http://www.math.uoa.gr/me/>).

## 4.5 Brain and Mind

The Programme was approved by the Ministry of Education decree 88743/B7/7-10-2003 and has been running since 2003, in co-operation with

1. the Department of Medicine of the University of Crete
2. the Department of Computer Science of the University of Crete
3. the Department of Physics of the University of Crete
4. the Department of Philosophical and Social Studies of the University of Crete
5. the Department of Nursing of N.K.U.A.

The goal of the Programme is the interdepartmental, interdisciplinary, integrated approach of the scientific questions regarding the brain and the emerging mind, consciousness and behaviour. Its aim is to offer high quality graduate studies in Greece, to promote research in cutting edge scientific and technological fields, and to prepare scientists able to excel in Academic career, in International Research Institutions, in the public domain, and in the job market.

The Programme contains 3 scientific approaches based on international educational practice: (a) Basic Biological Neuroscience, (b) Computational Neuroscience, Neuroinformatics and Artificial Intelligence, and (c) Social and Cognitive Neuroscience. The participation of internationally known scientists from several Universities and Research Centers and the excellent curriculum of studies guarantee well and widely educated graduates, who will

be able to obtain positions in the Greek Universities and to realize Greek efforts to be competitive in cutting edge technologies such as functional brain imaging for research and diagnosis, neural networks, smart machines, neural prostheses, and development of neuroactive substances useful for treatment of neurodegenerative and neuropsychiatric diseases.

The Programme awards Master's Degrees, admitting up to thirty (30) students per year, depending on the infrastructure of the participating Departments and the number of teaching faculty members<sup>4</sup>. The duration of study is four (4) semesters at least.

The Programme admits graduates of all University Departments in Greece or corresponding Departments or Schools abroad, provided they satisfy the necessary conditions for successful attendance.

More information concerning the programme of studies, the courses offered etc. is provided by the Programme Secretary Ms. M. Panagou, tel. +30 2810 395 511, *email* bmsecr@med.uoc.gr, and at the Programme's website (<http://Brain-Mind.med.uoc.gr/>).

## 4.6 Programme of Doctoral Studies

As already mentioned, until the publication of Law 3685/2008, which contains the institutional framework for postgraduate studies, the Department offered the Doctoral Degree (Ph.D.) only through Inter-Departmental Programmes of Postgraduate Studies (in particular, through the two Programmes which it had been running). Since the academic year 2008-9 the Department has run a Programme of Doctoral Studies (P.D.S.), according to article 9 of Law 3685/2008.

Anyone interested in preparing a doctoral thesis on a subject cultivated in the Department, has to submit an application at the P.D.S. Secretary's Office, determining roughly the proposed topic of his/her thesis.

Applications can be submitted by any holder of a Master's Degree. In extraordinary cases, specified in the Regulations for Postgraduate Studies, after a justified decision of the General Assembly, a person can be admitted as a doctoral candidate without being a holder of a Master's Degree. Graduates of Technological Educational Institutes and other corresponding Schools can be admitted as doctoral candidates only provided they are holders of a Master's Degree.

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<sup>4</sup>Until the publication of Law 3685/2008, the Programme had been awarding Doctoral Degrees (Ph.D.), too.

For every doctoral candidate, the General Assembly determines a three member advisory committee, the specialization of all members of which is similar to the research subject of the candidate. One member of the advisory committee is determined as supervisor and must be either a Professor or an Associate Professor or an Assistant Professor in the Department (of Philosophy and History of Science); the remaining two members may be (retired) faculty members of this or any other Department of the University of Athens or any other University in Greece or abroad, or faculty members of a Technological Educational Institute or an equivalent School or researchers of grade A, B or C at a recognized research center in Greece or abroad, provided they are holders of a Doctoral Degree.

The advisory committee, in co-operation with the doctoral candidate, determines the topic of the doctoral thesis.

The duration of study towards obtaining a Ph.D. cannot be less than

- three (3) full calendar years, starting from the date of determination of the advisory committee, if the doctoral candidate holds a Master's Degree,
- four (4) full calendar years, starting from the date of determination of the advisory committee, if the doctoral candidate was admitted as an extraordinary case without being a holder of a Master's Degree.

More information is provided by the Secretary of the P.D.S. Mrs. P. Petropoulou, tel. +30 210 727 5518, *email* pepetrop@phs.uoa.gr.



Immanuel Kant (1724–1804)



## 5

# Library and Laboratories

## 5.1 Library

The Department Library is part of the Central Library of the Sciences of the University of Athens and was opened in 1995. It occupies an area of 450 m<sup>2</sup> on two levels, adjacent to Lecture Halls of the Department; the reading room and the PC room are situated on the ground floor, while its collection of books and journals is found on the mezzanine.

The library collection consists of about 16000 books and 230 journal series. Copies of undergraduate, M.Sc. and Ph.D. dissertations submitted to the Department are also found in the Library. Topics covered by the collection include philosophy, philosophy of science, methodology and history of science etc.

The material is classified using the decimal Dewey system (DDC). For the organization of the material, the Horizon software system is used, with on-line links to all other libraries of the University of Athens. Information is introduced into the system following Anglo-american rules (AACR2). Thematic headings of the Library of Congress are used, which are translated and adapted to Greek.

The Library is open to the public 09.00–18.00, Monday to Friday (except on public holidays and during the summer break). Access to the books and the reading room is free.

Faculty members can borrow books for fifteen (15) working days and have the right to renew them, provided no other library user has requested the material. All other users of the library may study books/journals in the reading room, as well as borrow a few books, depositing their identity card, passport or student card, with the obligation to return them in the same

condition.

In a PC room, five (5) multimedia stations are available, which can be used for searching the library's electronic catalogue, the University of Athens databases and the electronic journal collection of HEAL-LINK (Network of Greek Academic Libraries), as well as for surfing on the internet.

Questions and other enquiries concerning the Library can be addressed to the library staff, by email (mithe@lib.uoa.gr) or by fax (+30 210 727 5513).

## 5.2 Laboratory for Electronic Processing of Historical Archives

**Director: Prof. Kostas Gavroglu**

The aim of the Laboratory is to develop the necessary technology and know-how for the collection, digitization and electronic registration of historical archives and libraries. This goal involves a wide spectrum of specialized disciplines, like history, literature, palaeography and informatics. It also requires skills related to the building of databases and the construction of digital libraries. The successful outcome depends on the collaboration of experts working on all these fields. The major research aim of the laboratory is to provide the academic community with a corpus of Greek historical archives and libraries including material which dates back to the 17th and the 18th centuries and is now dispersed all over the world. A properly designed software will provide access to this material, allowing researchers to conduct their inquiry through well-organized thematic categories. The most significant outcomes expected from the advancement of the research activities of the laboratory are the following:

- The preservation of valuable documents of modern Greek history, whose present condition is precarious due to natural decay or poor storing conditions.
- The systematic reconstruction of important historical archives and the virtual presentation of them in the form of digital libraries.
- The development of web services through which the researchers will be able to access the laboratory databases. The construction of proper software tools, attuned to the particularities of each historical collection is expected to facilitate this communication.
- The upgrading of Greek historical studies, by presenting this material to the academic community in a systematized way. The benefit will be even greater for historical studies focusing on time periods which,

despite their remarkable significance for modern Hellenism, tend to escape the attention of historians.

A great number of archives have already been reproduced in microfilm form by local libraries and are available through printed thematic catalogues. The development of joint research projects between the Laboratory and the institutions which are responsible for the administration of these archives will contribute decisively to the upgrading of historical research in the respective areas. This upgrading will be accomplished through functional innovations, which will allow researchers to take advantage of the navigation facilities over a wide and widely diversified corpus of historical information. Such a development is very important for the Department of the History and Philosophy of Science, because a considerable number of these archives are documents recording the activities of individual scientists, experimental laboratories or even entire scientific disciplines during crucial historical periods.

The most important among the research projects that have been completed in the Laboratory is the project *Hellinominon*, whose objective was the creation of a digital library of philosophical and scientific texts and manuscripts that were written in Greek from 1600 until 1821 (<http://www.lib.uoa.gr/hellinominon/>).

### 5.3 Laboratory for Cognitive Science and Educational Technology

**Director: Prof. Stella Vosniadou**

The Laboratory is housed in the building next to the offices building of the Department and is affiliated to the Interdisciplinary Graduate Program “Basic and Applied Cognitive Science”. The work of the laboratory which currently employs about 10 full and part time researchers focuses on the following areas:

- the development of methodologies and empirical research to investigate processes of learning and knowledge acquisition in various subject-matter areas (physics, mathematics, biology, history etc.)
- the collaboration with computer science departments and artificial intelligence labs for the development of computational models and AI learning systems
- the collaboration with Universities and private companies for the development and testing of educational software
- the design of technology-supported learning environments.

## 5.4 Laboratory for Knowledge Management

**Director: Prof. Dionysios Anapolitanos**

The fundamental aim of the Laboratory is the advancement and introduction of concepts and theorems towards a unified approach to model domain knowledge. This unified approach will result into practical applications into the knowledge management area. Due to our unified approach our team background is interdisciplinary and combines Philosophy, Logic, Linguistics, Differential Geometry, Computer Science and Management Science.

In particular, the mission of the Laboratory is

- To advance research in the fields of semantic based knowledge acquisition and modelling, language independent knowledge sharing and use, text mining, content based image retrieval
- To perform basic and applied research in the areas of intelligent content vision, artificial cognitive systems, collaboration environments for humans and machines, interaction paradigms for mixed reality environments, unfolding the complexity of digital repositories due to temporal elements (cultural and/or scientific).
- To collaborate with research and academic institutions in Greece and abroad, for the promotion of research in knowledge management.
- To organize scientific lectures, meetings, seminars, conferences, congresses and other scientific events and publications.
- To collaborate with institutions of public sector, local government, scientific and social institutions, as well as with international organizations in the field of knowledge management.
- To provide services in the field of knowledge management for organizations and the private sector.



John Maynard Keynes (1883–1946)

## 6

# Scientific Activities

During its life, the Department has exhibited intense and polymorphic scientific activity, often in co-operation with other Greek or foreign academic institutions and scientific societies.

### 6.1 Awards of Honorary Doctorates

The following have been awarded honorary doctorates of the Department

*Heinrich Pfeiffer*, 22/5/1995, former Secretary General of the Alexander von Humboldt Foundation.

*Thomas Kuhn*, 12/10/1995, Emeritus Professor of Philosophy, Massachusetts Institute of Technology.

*Paul Ricoeur*, 1/11/1995, Emeritus Professor of Philosophy, University of Paris X-Nanterre and University of Chicago.

*Richard C. Lewontin*, 9/5/1996, Professor of Zoology, Harvard University.

*Isaiah Berlin, Sir*, 18/4/1997, Emeritus Professor of History of Ideas, University of Oxford.

*Hans Albert*, 27/5/1997, Emeritus Professor of Philosophy, University of Mannheim.

*Hilary Putnam*, 14/3/1998, Professor of Philosophy, Harvard University.

*Jean Laplanche*, 14/1/1999, Emeritus Professor of Psychoanalysis, University of Paris VII.

*Gary Becker*, 11/9/2002, Professor of Economics, University of Chicago, holder of Nobel Prize in Economics 1992.

*Richard Posner*, 18/9/2002, Professor of Economic Analysis of Law, University of Chicago, and Judge at the U.S. Court of Appeals (7th Circuit).

*Reinhold Zippelius*, 18/10/2002, Emeritus Professor of Philosophy of Law, University of Erlangen.

*Geoffrey Lloyd*, 20/12/2003, Emeritus Professor of Ancient Philosophy and Science, University of Cambridge.

*Michael Frede*, 27/1/2005, Professor of History of Philosophy, University of Oxford.

*Martha Nussbaum*, 13/12/2005, Professor of Philosophy, University of Chicago.

*Quentin Skinner*, 8/5/2007, Regius Professor of History, University of Cambridge.

*John Roemer*, 20/5/2008, Professor of Political Science and Economics, Yale University.

## 6.2 Series of Monthly Interdisciplinary Lectures

Every year, the Department organizes a series of interdisciplinary lectures on a common theme, which take place in the Main Building of N.K.U.A. The following series have been organized so far.

### Academic year 1995-1996

#### Theme: Evolution

- 17/1/1996 Konstantinos Crimbas  
*Stretching Darwinism to its extreme limits.*
- 21/2/1996 Marios Begzos  
*The theory of evolution in the philosophy of religion.*
- 20/3/1996 Kostas Gavroglu  
*Scientists as historians: the myth of evolution of theories in Physics.*
- 24/4/1996 Dimitra Theofanopoulou-Kontou  
*Evolution and change in language. Theoretical approaches and problems.*
- 22/5/1996 Antonis Liakos  
*Transforming the past. Evolution in Historiography.*

### Academic year 1996-1997

#### Theme: Theory

- 15/10/1996 Dimitris Dimitrakos  
*The position of theory in the physical and social sciences.*
- 12/11/1996 Stelios Virvidakis  
*Conceptions of theory in philosophy.*

- 17/12/1996 Athanase Tzavaras  
*Freudean psychoanalysis: struggle at the end of the century.*
- 21/1/1997 Dionysios Anapolitanos  
*The concept of theory in Logic and Mathematics.*
- 18/2/1997 Georgios Babiniotis  
*Theory and Practice in Linguistics.*
- 18/3/1997 Pavlos Surlas  
*Theory and Interpretation of Law.*
- 22/4/1997 Athanasios Vagenas  
*The theory of Literature today.*

### **Academic year 1997-1998**

#### **Theme: Rationality**

- 21/10/1997 Anastasios Bougas  
*A critique of modern critique of rationality.*
- 18/11/1997 Athanasios Lipovats  
*Rationality and Psychoanalysis.*
- 16/12/1997 Stavros Drakopoulos  
*Rationality and Economics: the model of homo economicus.*
- 20/1/1998 Savas Condaratos  
*Utopias as a paroxysmal manifestation of rationality.*
- 24/2/1998 Christos Giannaras  
*What makes rationalism rational?*

### **Academic year 1998-1999**

#### **Theme: Truth**

- 26/11/1998 Constantinos Dimitracopoulos  
*Truth and Proof: Gödel's Theorems.*
- 17/12/1998 Dimitris Dimitrakos  
*Truth and Open Society.*
- 21/1/1999 Vasileios Kyrkos  
*Language and Truth in Ancient Greek Philosophy.*
- 25/2/1999 Michael Kopidakis  
*The city of pigs. A platonic ambiguity.*
- 25/3/1999 Stavroula Tsouna-McKirahan  
*The truth of the "other". The problem of other minds in ancient Greek philosophy.*
- 22/4/1999 Theodosios Tasios  
*The success of scientific reasoning.*

## **Academic year 1999-2000**

### **Theme: Relativism**

- 25/11/1999 Nikolaos Mouzelis  
*Modernity: a non eurocentric approach.*
- 16/12/1999 Theodore Arabatzis  
*History of science and relativism.*
- 20/1/2000 Paschalis Kitromilidis  
*The limits of relativism in the human sciences.*
- 27/1/2000 Petros Gemtos  
*Freedom, Prosperity, Justice as criteria of evaluation of rules and institutions.*
- 17/2/2000 Aristeidis Baltas  
*How Physics writes its history: asymmetry or relativism?*
- 24/2/2000 Stathis Psillos  
*Relativism and Naturalised Epistemology.*
- 30/3/2000 Myrto Dragona-Monachou  
*Can a universal ethics overcome ethical relativism?*
- 20/4/2000 Stavroula Tsinorema  
*The logic of difference: Pluralism is not relativism.*
- 25/5/2000 Vasso Kindi  
*Relativism: Problems and misunderstandings.*

## **Academic year 2000-2001**

### **Theme: Critique**

- 19/10/2000 Stylianos Virvidakis  
*The concept of critical philosophy and the limits of thought.*
- 23/11/2000 Nanos Valaoritis  
*Evolution of the theory and critique of literary texts in the 20th century.*
- 14/12/2000 Dimitris Dimitrakos  
*The weapon of critique: Kant-Marx-Popper.*
- 18/1/2001 Dimitrios Maronitis  
*The critique of pure reason.*
- 15/2/2001 Anastasios Bougas  
*Critique: Reason and Passion.*
- 15/3/2001 Marilena Kasimati  
*Critique in the history of art.*



- 5/4/2001 Kosmas Psychopaidis  
*The critical idea of the social sciences.*
- 26/4/2001 Ioli Pateli  
*The critical function of Philosophy of Science.*
- 24/5/2001 Georgios Christodoulou  
*On textual criticism: Utopia and reality.*

### **Academic year 2001-2002**

#### **Theme: Enlightenment**

- 22/11/2001 Petros Gemtos  
*The timeliness of Enlightenment.*  
Vasso Kindi and Stathis Psillos  
*Karl Popper's centenary.*
- 13/12/2001 Paschalis Kitromilidis  
*Montesquieu and the politics of the Enlightenment.*
- 24/1/2002 Pericles Vallianos  
*Reason and History. A problematic relationship.*
- 7/2/2002 Grigorios Molyvas  
*British Enlightenment and the limits of political radicalism.*
- 28/2/2002 Athanasios Markopoulos  
*Problems of education in the period of so-called first byzantine humanism.*
- 21/3/2002 K. Gavroglu, D. Dialetis, Th. Arabatzis  
*Science and Enlightenment: New historiographical trends.*
- 25/4/2002 Aristeidis Baltas  
*Science, History, Politics: What falsifies what?*
- 30/5/2002 Alexandra Deligiorgi  
*The Post-Kantian interpretation of the Enlightenment and the origins of modernity.*

### **Academic year 2002-2003**

#### **Theme: Hellas and Hesperia**

- 22/10/2002 Anastasios Bougas  
*The Greek sources of German Idealism: Hegel and Hölderlin.*
- 19/11/2002 Linos Benakis  
*The presence of Western Philosophy and Theology in Byzantium (Translations of latin texts - ideological confrontations).*

- 10/12/2002 Petros Gemtos  
*Ancient Greek economic thought and modern science.*
- 21/1/2003 K. Gavroglu, D. Dialetis, J. Christianidis  
*The processes of appropriations in the sciences.*
- 18/2/2003 Michael Sakellariou  
*The western mirror of Greek antiquity as a source of modern Greek self-knowledge.*
- 18/3/2003 M. Dragona-Monachou, S. Virvidakis, A. Hatzis  
*The relevance of ancient Greek philosophy to contemporary ethical and political thought.*
- 8/4/2003 Konstantinos Despotopoulos  
*Hellas and Europe.*

### **Academic year 2003-2004**

#### **Theme: Ideology and Science**

- 21/10/2003 Anastasios Bougas  
*Ideology and social unconscious. From Marx to Althusser.*
- 25/11/2003 Antonios Makrydimitris  
*Ideology as legalization and legalization as ideology.*
- 16/12/2003 Athanase Tzavaras  
*Ideology as psychology and psychology as ideology.*
- 20/1/2004 Elisabeth Kirtsoglou  
*Ideology and Anthropology.*
- 17/2/2004 Dimitris Dimitrakos  
*Ideology and science in the thought of Antonio Gramsci.*
- 27/4/2004 Dionysios Anapolitanos  
*The role of ideology in the formation of the physical sciences.*
- 18/5/2004 Nikolaos Mouzelis  
*Anti-holism: The basic ideology of metamodern thought.*

### **Academic year 2004-2005**

#### **Theme: Tradition and Evolution**

- 19/10/2004 Xenophon Paparigopoulos  
*Tradition and evolution: Directions of speculation.*
- 23/11/2004 Michael Zoumboulakis  
*The concept of evolution in economic thought.*
- 14/12/2004 Charidemos Tsoukas  
*The necessity of "tradition" in social systems: A meta-rationalistic approach.*

- 18/1/2005 Georgios Koumantos  
*Family Law as a point of confrontation.*
- 15/2/2005 Michael Kopidakis  
*The “Laconicon” of O. Elytis and its philosophical sources.*
- 15/3/2005 Chrysostomos Mantzavinos  
*Tradition and evolution as problematic in the theory of institutions.*
- 12/4/2005 Panagiotis Kazakos  
*Tradition and reforms in state and economy.*
- 17/5/2005 Vasileios Lambrinouidakis  
*Modern trends in Archaeology: Theory and practice.*

### **Academic year 2005-2006**

#### **Theme: Philosophy and Science**

- 4/10/2005 Dionysios Anapolitanos and Stathis Psillos  
*Philosophy and Science: A relationship under scrutiny.*
- 22/11/2005 Aristeidis Aragiorgis  
*New approaches to the philosophical programme of induction.*
- 17/1/2006 Vassileios Karakostas  
*Philosophy and modern physics: Reality and perception in the physical world.*
- 21/2/2006 Filimon Peonidis  
*Ethics and Science: Parallels and exchanges.*
- 21/3/2006 Theodore Arabatzis and Vasso Kindi  
*Can philosophy contribute to the rational progress of science?*
- 11/4/2006 Eleni Manolakaki  
*Conceptual Relativism.*
- 16/5/2006 Petros Gemtos  
*Philosophy and the social sciences.*

### **Academic year 2006-2007**

#### **Theme: Philosophical, historical, political and social of components of technology**

- 24/10/2006 Aristotle Tympas  
*The History of Technology and its History.*
- 7/11/2006 Vasileios Karasmanis  
*Technological thought in Aristotle.*
- 28/11/2006 K. Gavroglu, D. Dialetis, J. Christianides  
*The Archimedes palimpsest and its reading by the new technologies.*

- 12/12/2006 Theodosios Tasios  
*Technological development in Ancient Greece: An anthropological and historical approach.*
- 23/1/2007 Iris Tzahili  
*What is new? Innovations, inertia and refutations in the prehistoric Aegean.*
- 27/2/2007 Vasileios Kyrkos  
*Man and his technology: Problems of conscience and responsibility.*
- 6/3/2007 Demosthenes Agrafiotis  
*On Technology: Social and cultural queries.*
- 27/3/2007 Agamemnon Tselikas and Ioannis Bitsakis  
*The Antikythera Mechanism: Approaches and Problems.*
- 24/4/2007 Olga Katsiardi-Herring  
*Greek merchants and artisans in Europe: Transfer of know-how (18th century).*
- 22/5/2007 Ioannis Kalogirou  
*Policies for the exploitation of Information and Communication Technologies in Greek economy and society: A rough road.*

### **Academic year 2007-2008**

#### **Theme: The University today**

- 16/10/2007 Petros Gemtos  
*Universities, Science and Free Society.*
- 20/11/2007 Demosthenes N. Assimakopoulos  
*The History of Research on the Atmospheric Environment.*
- 11/12/2007 Dimitrios Sotiropoulos  
*University Reform and the Bologna agreement: The "Pros", the "Cons" and Reform conditions.*
- 22/1/2008 Theodosios Tasios  
*Contradictions in Modern Universities.*
- 19/2/2008 Nikolaos Alivizatos  
*A Greek originality: The Constitutional regulation of the University.*
- 11/3/2008 Panos Tsakoglou  
*Education and Inequality.*
- 15/4/2008 Aristides Hatzis  
*Law in Books and Law in Action: The End of Law's Autonomy and Legal Education in Greece.*

- 13/5/2008 Michael Vellas  
*Circumstances of birth of European Universities.*
- 3/6/2008 Lois Labrianidis  
*Greek society does not seem to understand the importance of University: The case of founding regional Universities.*

### **Academic year 2008-2009**

#### **Theme: Object and Objectivity**

- 14/10/2008 Stelios Virvidakis  
*Objectivity in Ethics.*
- 18/11/2008 Konstantinos Moutoussis  
*The objective subjectivity.*
- 9/12/2008 Georgios Gyftodimos  
*Object and objectivity of perception.*
- 13/1/2009 Nikos Daskalothanassis  
*Objectivity in the discourse of art criticism.*
- 3/2/2009 Ekaterini Kaleri  
*The issue of objectivity in the Humanities.*
- 24/2/2009 Dimitris Kyrtatas  
*Objectivity and subjectivity in History.*
- 17/3/2009 Dionysis Anapolitanos  
*Objectivity as metaphysics of the object.*
- 7/4/2009 Vassilios Karakostas  
*Concepts of objectivity in Physics.*
- 28/4/2009 Stathis Psillos and Dimitra Christopoulou  
*Mathematical Platonism: Numbers as abstract notions.*
- 19/5/2009 Theodore Arabatzis  
*Does objectivity have a history?*

### **6.3 Organization of Conferences and Meetings**

The Department has (co-)organized the following conferences/meetings:

- 24/1/1995 “Relativity: Fifty years later”, meeting in memory of the physicist Franco Selleri, in co-operation with the Group for Interdisciplinary Research of the University of Ioannina.
- 4–7/4/1996 International conference on the Philosophy and History of Chemistry and Biochemistry, in co-operation with the Department of Philosophy of the University of Marburg.

- 13/5/1996 Meeting in memory of the British philosopher and sociologist Ernest Gellner, in co-operation with the Department of Political Science of N.K.U.A.
- 28–30/5/1996 1st Athens-Pittsburgh Symposium, in co-operation with the Department of History and Philosophy of Science of the University of Pittsburgh and the General Department of N.T.U.A., at Delphi.
- 11–12/10/1996 Panhellenic Conference on the History of Science.
- Sept–Oct 1997 Meetings in the framework of the programme “Evolution of Chemistry in Europe 1789–1939”, in co-operation with the European Science Foundation.
- 13/2/1997 Round-table discussion on the “Sokal affair”.
- 5/4/1997 Symposium on Descartes’ philosophy, on the occasion of the 400th anniversary of his birth.
- 20–21/5/1997 “The school of 2000”, in co-operation with the Departments of Theatre Studies, Music Studies, Communication & Mass Media of N.K.U.A. and the Pedagogical Institute.
- 26–30/8/1997 7th European Conference for Research on Learning and Instruction.
- 22–26/5/1998 2nd Athens-Pittsburgh Symposium, in co-operation with the Department of History and Philosophy of Science of the University of Pittsburgh and the General Department of N.T.U.A., at Delphi.
- April 2000 Conference “Philosophy and human rights”.
- 25–29/6/2001 Wittgenstein in Delphi - fifty years after his death.
- 24/5/2002 4th Meeting of Greek Historians of Economic Thought.
- July 2002 Conference “History in Philosophy”, at Hermoupolis.
- 2–9/6/2002 3rd International Meeting of the Research Group STEP (Science and Technology in the European Periphery) and 5th Meeting of ILAB (International Laboratory for the History of Science), at Aegina.
- 19–21/9/2002 19th Annual Conference of EALE (European Association of Law and Economics), in co-operation with the Departments of Law and Economics of N.K.U.A. and the Department of Economics of the University of Thessaly.
- 2/11/2002 “Psychology and Biology” meeting, in co-operation with the Division for Cognitive Psychology of the Greek Psychological Association.

April 2003	3rd Hellenic-Turkish Symposium on the Philosophy and History of Science.
1–6/6/2003	4th Athens-Pittsburgh Symposium, in co-operation with the Department of History and Philosophy of Science of the University of Pittsburgh and the General Department of N.T.U.A., at Delphi.
13–14/6/2003	3rd Metaphysics of Science Workshop on “Causality and Natural Laws”.
18/2/2004	1st Annual Meeting of the Greek Association of Economic Analysis of Law.
19–23/5/2004	4th European Symposium on Conceptual Change, at Delphi.
June 2004	International Symposium “Wittgenstein and Alternative Grammars”, at Aegina.
June 2004	Exemples, cas, paradimes. Questions d’epistémologie comparée à partir de Wittgenstein, in co-operation with the Collège Internationale de Philosophie.
July 2004	Conference “History and Narration”, at Hermoupolis.
2/4/2005	Meeting “Interdisciplinary approach of Mathematics”, in co-operation with the Department of Mathematics of N.K.U.A.
27–28/5/2005	5η Workshop of the Research Programme SOCIOLD, in co-operation with the Universities of Aarhus, Aberdeen, Amsterdam, Helsinki, Macedonia and Paris II.
28/7–3/8/2005	Logic Colloquium ’05, Association for Symbolic Logic European Summer Meeting, in co-operation with the Department of Mathematics of N.K.U.A.
5/11/2005	Symposium “Cognition and Emotion”, in co-operation with the Hellenic Cognitive Science Society.
March 2006	International Symposium “Translation and Interpretation”, in co-operation with the European Translation Center.
26/5/2006	Celebratory meeting for the Department’s 12th anniversary.
10–11/11/2006	1st Panhellenic Conference on Economic Analysis of Law, in co-operation with the Department of Economics and the Department of Business Administration of the University of Piraeus.
2/3/2007	Meeting “Concept and Conceptual Change”, in co-operation with the Hellenic Cognitive Science Society.
22–25/4/2007	Thought Experiments.

- 23–27/5/2007 EuroCogSci07, 2nd European Cognitive Science Conference in co-operation with the Cognitive Science Society and the Hellenic Cognitive Science Society, at Delphi.
- 6–12/8/2007 11th Symposium Hellenisticum: Sextus Empiricus and Ancient Physics, at Delphi.
- 31/10/2007 Philosophical commemoration of Michael Frede.
- 28/5/2008 Concepts and Conceptual Change.
- 15-20/6/2008 Computability in Europe 2008.
- 21-23/8/2008 T.S. Kuhn's *The structure of Scientific Revolutions: Impact, Relevance and Open Issues*, in co-operation with the Department of Philosophy of the University of Chicago.
- 29-30/9/2008 Meeting on “Topics of educational policy: The vision of the International Academy of Education”.
- Dec. 2008 Conference on Byzantine Philosophy, in co-operation with the Norwegian Institute of Athens.
- May 2009 5th Conference on Ancient Greek Philosophy: Aristotle, *Metaphysics* Z10-11.

## 6.4 Books - Editions by Faculty Members with International Publishers

### Division of Philosophy and Theory of Science and Technology

1. D. Anapolitanos: *Leibniz: Representation, Continuity and the Spatiotemporal (Science and Philosophy Series)*, Kluwer Academic Publishers, 1998.
2. D. Anapolitanos, A. Baltas and S. Tsinorema (eds.): *Philosophy and the Many Faces of Science (CPS Publications in the Philosophy of Science)*, Rowman & Littlefield Publishers, 1998.
3. A. Hatzis and B. Depoorter (eds.): *Special Issue of the International Review of Law and Economics, Proceedings of the 19th Annual Conference of the European Association of Law and Economics*, Elsevier, 2004.
4. A. N. Hatzis (ed.): *Economic Analysis of Law: A European Perspective*, Edward Elgar, 2007.
5. A. N. Hatzis (ed.): *Norms and Values in Law and Economics*, Routledge, 2008 (to appear).
6. A. N. Hatzis (ed.): *Methodology of Law and Economics*, Edward Elgar, 2008 (to appear).



7. J. Barnes, S. Bobzien, K. Flannery and K. Ierodiakonou (translators): *Alexander of Aphrodisias on Aristotle: Prior Analytics 1.1-7*, Duckworth, 1991.
8. K. Ierodiakonou (ed.): *Topics in Stoic Philosophy*, Clarendon Press, 1999.
9. K. Ierodiakonou (ed.): *Byzantine Philosophy and Its Ancient Sources*, Clarendon Press, 2002.
10. S. Psillos: *Scientific Realism: How Science Tracks Truth*, Routledge, 1999.
11. S. Psillos: *Causation and Explanation*, Acumen, 2002, και McGill-Queens University Press, 2003. British Society for the Philosophy of Science President's award for the best textbook on Philosophy of Science in 2004.
12. S. Psillos: *Philosophy of Science A-Z*, Edinburgh University Press, 2007.
13. S. Psillos: *Knowing the Structure of Nature*, MacMillan-Palgrave, London, 2009.
14. S. Psillos and M. Curd (eds.): *The Routledge Companion to the Philosophy of Science*, Routledge, 2007.
15. S. Virvidakis: *La robustesse du bien*, Éditions Jacqueline Chambon, Nîmes, 1996.

#### **Division of History of Science and Technology**

1. Th. Arabatzis: *Representing Electrons: A Biographical Approach to Theoretical Entities*, The University of Chicago Press, 2006.
2. J. Christianidis (ed.): *Classics in the History of Greek Mathematics (Boston Studies in the Philosophy of Science)*, Kluwer, 2004.
3. C. Dimitracopoulos, L. Newelski, D. Normann and J. Steel (eds.): *Logic Colloquium '05, Proceedings of the European Summer Meeting of the Association for Symbolic Logic (Lecture Notes in Logic)*, Cambridge University Press, 2007.
4. A. Beckmann, C. Dimitracopoulos and B. Löwe: *Logic and Theory of Algorithms, Proceedings of CiE 2008*, Lecture Notes in Comput. Sci. 5028, Springer-Verlag, 2008.
5. S. Drakopoulos: *Values and Economic Theory: The Case of Hedonism*, Aldershot, UK: Gower, 1991.

6. K. Gavroglu and Y. Goudaroulis: *Methodological aspects of the Development of Low Temperature Physics 1881–1957, Concepts out of Context(s) (Science and Philosophy)*, Kluwer, 1989.
7. K. Gavroglu, Y. Goudaroulis and P. Nikolakopoulos (eds.): *Imre Lakatos and Theories of Scientific Change (Boston Studies in the Philosophy of Science)*, Kluwer, 1989.
8. K. Gavroglu and Y. Goudaroulis (eds.): *Through measurement to knowledge: The selected papers of H. K. Onnes 1853–1926 (Boston Studies in the Philosophy of Science)*, Kluwer, 1991.
9. K. Gavroglu, J. Christianidis and E. Nikolaidis (eds.): *Trends in the Historiography of Science (Boston Studies in the Philosophy of Science)*, Kluwer, 1994.
10. K. Gavroglu, J. J. Stachel and M. W. Wartofsky (eds.): *Science, Politics and Social Practice, In honor of R. S. Cohen (Boston Studies in the Philosophy of Science)*, Kluwer, 1994.
11. K. Gavroglu: *Fritz London (1900-1954), A Scientific Biography*, Cambridge University Press, 1995. Afterword by J. Bardeen (Nobel Prize in Physics 1956 and 1972).
12. K. Gavroglu, J. J. Stachel and M. W. Wartofsky (eds.): *Physics, Philosophy and the Scientific Community, In honor of R. S. Cohen (Boston Studies in the Philosophy of Science)*, Kluwer, 1995.
13. K. Gavroglu, J. J. Stachel and M. W. Wartofsky (eds.): *Science, Mind and Art, In honor of R. S. Cohen (Boston Studies in the Philosophy of Science)*, Kluwer, 1995.
14. K. Gavroglu (ed.): *The Sciences in the European Periphery During the Enlightenment (Archimedes New Studies in History and Philosophy of Science and Technology)*, Kluwer, 1999.
15. N. Psarros and K. Gavroglu (eds.): *Ars mutandi: Issues in the philosophy and the history of chemistry*, Leipzig University Press, 1999.
16. K. Gavroglu and J. Renn (eds.): *Positioning the History of Science (Boston Studies in the Philosophy of Science)*, Springer, 2007.
17. G. Gotsis and S. Drakopoulou-Dodd (eds.): *Entrepreneurship and Religion*, special issue of the *International Journal of Entrepreneurship and Innovation*, vol. 10, no. 2, May 2009.
18. M. Z. Kopidakis (nachwort): *G. Seferis, Die drei geheime Gedichte*, Romiosini, Köln, 1985.

### Division of Sciences of Cognition and Thinking

1. S. Vosniadou and A. Ortony (eds.): *Similarity and Analogical Reasoning*, Cambridge University Press, 1989.
2. S. Vosniadou, E. De Corte and H. Mandl (eds.): *Technology-Based Learning Environments: Psychological and Educational Foundations*, Springer-Verlag, 1994.
3. S. Vosniadou (ed.): Special Issue of *Learning and Instruction: The Journal of the European Association for Research on Learning and Instruction*, 4 (3-6), 1994.
4. S. Vosniadou, E. De Corte, R. Glaser and H. Mandl (eds.): *International Perspectives on the Design of Technology-Supported Learning Environments*, Lawrence Erlbaum Associates Inc., 1996.
5. S. Vosniadou and W. Schnotz (eds.): Special Issue of the *European Journal of Psychology of Education*, XII (2), 1997.
6. W. Schnotz, S. Vosniadou and M. Carretero (eds.): *New Perspectives on Conceptual Change (Advances in Learning and Instruction)*, Pergamon, 1999.
7. D. Kayser and S. Vosniadou (eds.): *Modelling Changes in Understanding: Case Studies in Physical Reasoning (Advances in Learning and Instruction)*, Pergamon, 2000.
8. S. Vosniadou: *How Children Learn*, Educational Practices, 7, The International Academy of Education (IAE) and the International Bureau of Education (UNESCO), 2001.
9. L. Verschaffel and S. Vosniadou (eds.): Special Issue of *Learning and Instruction: The Journal of the European Association for Research on Learning and Instruction*, 2004.
10. L. Verschaffel, F. Dochy, M. Boekarts and S. Vosniadou (eds.): *Instructional Psychology: Past, Present and Future Trends - Sixteen Essays in Honour of Erik De Corte (Advances in Learning and Instruction)*, Elsevier, 2006.
11. S. Vosniadou, A. Baltas and X. Vamvakoussi (eds.): *Reframing the Conceptual Change Approach in Learning and Instruction (Advances in Learning and Instruction)*, Elsevier, 2007.
12. S. Vosniadou, D. Kayser and A. Protopapas (eds.): *Proceedings of EuroCogSci07*, Lawrence Erlbaum Associates, Sussex, UK, 2007.
13. S. Vosniadou (ed.): *Handbook of Research on Conceptual Change*, Routledge, New York, 2008.



K. Gödel and A. Einstein  
at the Institute for Advanced Study (1950)