Master of Arts Programme in Science, Technology and Society In Europe (ESST)

(http://www.esst.eu)

GRADUATE PROGRAM IN THE HISTORY AND PHILOSOPHY OF SCIENCE AND TECHNOLOGY (GPHPST)

(http://www.hpst.phs.uoa.gr)

NATIONAL AND KAPODISTRIAN UNIVERSITY OF ATHENS (UOA)/ NATIONAL TECHNICAL UNIVERSITY OF ATHENS (NTUA)

Contents

1. THE PROGRAM AND ITS ENVIRONMENT

1.1. Program

The International Master's Program in Science, Technology and Society in Europe focuses on topics in the rapidly growing interdisciplinary field of Science, Technology and Society studies. The programme covers somewhat more than one year of full time studies. It is open to both Greek and international students. The language of instruction is Greek and English (Semester I) and English (Semester II).

The program is offered in co-operation with the European Inter-University Association on Society, Science and Technology (ESST) and involves collaboration and exchange with a number of other European universities. The list of ESST member universities is described in ESST's web page.

The program is a combination of course-work and the preparation of an individual thesis. During the first semester the students carry out course work at the GPHPST. The thesis work is to be carried out during the second semester, at one of the participating university units (including GPHPST).

The program is designed to provide post-graduate training for students of all backgrounds, including: social sciences, natural and engineering sciences, and the humanities. The program is interdisciplinary and draws on recent research results from a number of disciplines, such as philosophy, history, sociology, economics, geography, and political science.

1.2. Environment

The program is based at the GPHPST. In addition to housing, administering, and delivering the program, GPHPST provides a research-oriented learning environment for participating students.

- GPHPST is supported by the Department of Philosophy and History of Science (DPHS), National and Kapodistrian University of Athens (UOA), and, the Division of Humanities, Social Sciences, and Law (DHSSL), Department of Applied Mathematics and Physics, National Technical University of Athens (NTUA).

The supporters of the GPHPST co-operate in graduate education and research. In the International Master's Programme in Science, Technology and Society in Europe, they are committed to ongoing collaboration in program design and curriculum development, in addition to providing course instructors and thesis supervisors.

2. PURPOSE

The program's overarching purpose is to contribute to the education of a new generation of researchers and practitioners, competent to understand science and technology as social phenomena and to help guide their development towards socially appropriate ends.

Upon successful completion of this program, students should be qualified for one or more of the following options:

- further research in the area of Science, Technology and Society (STS) studies;
- employment in public service or business management with special expertise in the relations among science, technology, the economy and society at large;
- continuation of a career in science or technology with additional expertise in related policy and management issues.

The program offers both Greek and international students the opportunity to pursue advanced studies in the dynamic and growing social scientific field of interdisciplinary studies in Science, Technology and Society. International collaboration in ESST ensures that the program maintains a high level of academic quality and remains close to the current frontiers of research in its field.

The program also contributes to internationalisation. As an international program, it offers the students the possibility of carrying out their second semester of study at another European university participating in ESST. Similar possibilities to study at GPHPST on an exchange basis are offered to students from other universities that take part in the program.

3. SCOPE AND CONTENT

The program is conducted on the basis of full-time study. The completion time of approximately 13 months is divided into two semesters.

The program's organisation and content reflects a balance between a 'core curriculum' shared by all of the participating universities and the special strengths and interests of each of these participants. Studies in the first semester cover themes, subject matter and literature commonly taught by all participating universities. In the second semester, students choose one of the thesis specialisations offered by one of the member universities. This choice also determines their place of study during the second part of the program.

The main language of instruction is English, although it may be Greek during the first semester. In the second semester, instruction is in English and essays and theses are normally written in English. During the first semester, instruction and examination may be in either Greek or English, depending on what is most appropriate to particular circumstances.

The first semester comprises 3 seminars, covering the material of the 5 ESST shared modules. Instruction during the first semester consists of lectures and group discussions, based on prescribed readings. Students are required to write essays, based on selected literature. Examinations take the form of essay assignments and oral or written tests.

The second semester is devoted, first, to teaching designed so as to introduce to the student's chosen area of specialization, and, subsequently, to supervised thesis research. As already noted, instruction and examination is in English. Students are required to submit a completed thesis at GPHPST by the first week of October, approximately one year -- at most, 13 months -- after starting the program.

4. COMPONENTS OF THE PROGRAM

As noted in section 3, the programme is divided into two parts, referred to as semesters. The first semester introduces key current issues, debates, conceptual perspectives and methodological approaches. These provide a basis for thesis research in the second semester.

The first semester covers a 'core curriculum' of topics addressed by all participants in ESST. These topics are commonly addressed by all participants in ESST. They are locally adapted by the participating universities, who use their particular strengths in designing the first semester programme.

Similarly, the second semester program also builds on the strengths of individual participants. The number of thesis specialisations available to students for the second semester has grown as more European universities have joined the ESST network.

4.1 Semester I

The first semester of study consists of 3 seminars, covering the 5-shared ESST modules (described in ESST's web page). Each seminar lasts 3 hours for a period of 12 weeks. Grading will be on the scale used at GPHPST (see below), as well as the scale used by ESST (see section 7.2).

Upon successful completion of the first semester, students will be able to:

- engage in informed debate about issues of Science, Technology and Society in Europe;
- analyse such issues from a variety of perspectives;
- investigate in depth a selected issue and produce a substantial commentary or report on it.

The 5 modules comprising the first semester are listed below are described in the ESST web page. The 3 seminars to cover the material of these 5 modules are described below:

A. A seminar in 'Science, Technology, and Society', which will cover the material of two of the ESST modules: 'Introduction in Society, Science, and Technology Studies' and 'Science and technology in the making: Entering the world of the laboratory'.

B. A seminar in 'Science and Technology Policy', which will cover the material of two more of the ESST modules: 'Globalization and regulation of science and technology', and 'The politics of knowledge'.

C. A seminar in 'History of Science and Technology', which will cover the material of the remaining ESST module ('Historical perspectives on scientific and technological change').

Responsible for the seminars: GPHPST

4.2 Semester II

In the second semester, students concentrate on a selected area of specialisation that is offered by one of the participating ESST academic units (including GPHPST). The host universities are responsible for teaching and tutoring.

At the host university, the students may participate in an introductory course of theoretical studies in a specific subject-area. This course may incorporate, or be accompanied by, instruction on research methods and seminars on academic writing geared to the production of a master's thesis. Grades for the introductory course are awarded according to the normal practice of the host university.

Subsequently, the students conduct supervised research leading to the completion of a master's thesis of approximately 15,000 – 20,000 words. The thesis work is carried out in co-operation with a researcher, or group of researchers, based at the host university. The thesis is to be completed over a period of twenty weeks (around five calendar months).

The second semester of study terminates with submission of the thesis. The thesis is to be submitted at GPHPST during the first week of October, about one year -- at most, 13 months -- after the start of the programme.

Thesis evaluation is carried out according to the ESST assessment system. Theses will be graded on both the GPHPST system and the ECTS grading scale. Theses are also graded on the 4-point ESST scale, in order to provide the basis for decisions concerning the award of an ESST diploma.

Upon successful completion of the second semester, students will be able to:

- identify an issue in Science, Technology and Society (in Europe) that is susceptible to focused analysis;
- problematise the issue within the conceptual frameworks explored in the first semester and further developed in the second;
- analyse the issue using a methodological approach and related research methods;

- generate either a report designed to influence policy or a dissertation which will contribute to analysis from an international perspective;
- adopt this approach or adapt other approaches in Science, Technology and Society studies to new issues and problems;
- engage in planning, negotiation and critical debate with a range of other actors in tackling an issue;
- proceed with an awareness of regional and (multi-)cultural differences within Europe and in Europe's global relationships;
- continue to develop and apply the acquired learning to aspects of Science, Technology and Society (in Europe).

Students will be informed about the specialisations of all member universities prior to joining the programme (for updates on the various specializations, see ESST's web page). Below, only the four specialisations to be offered at GPHPST are discussed.

4.2.1. Specialisation 1: Philosophy and History of Science and Technology

The list of GPHPST faculty includes a rich group of specialists in ancient and modern philosophy and philosophy of knowledge, and, in continental and analytic philosophy of science. This specialization is designed for international students who may want to take advantage of the opportunity to work with them during the second semester of their ESST studies.

GPHPST also includes a large mix of senior and junior historians of science and technology, including specialists in the history of science in local contexts. The specialization is especially appropriate for international students who want to work on topics related to the history of science in the European periphery.

Responsible for the Specialisation: GPHPST

Contact: Kostas Gavroglu (history), Aristides Baltas (philosophy)

4.2.2. Specialisation 2: Information Technology: Historical to Policy Considerations

This specialization is designed for students interested in the history of information and associated technologies (computing, telecommunications, automation) and/or historically informed information technology policies. The emphasis is placed on European contexts. The list of possible topics includes:

Historical Issues: 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, the convergence of computing, telecommunications, and biotechnology, information technology and the emergence of nanotechnology.

Policy Issues: The emergence and elaboration of (national and/or international) state and business institutions and practices that affected information technology. Possible topics: activities of executive, legislative, and judicial authorities, firm and inter-firm actions, initiatives of scientific and professional institutions (societies, clubs, associations, councils, committees, chambers, etc.), the place of regulatory and standardization institutions, the role of award and patent related institutions. Information Technology, Social Sciences, and Humanities (Historical Computing or History and Computing).

Responsible for the specialisation: GPHPST

Contact: Aristotle Tympas

4.2.3 Specialization 3: Gender and the Physical Sciences

The analysis of physical sciences has posed a particularly important and intractable task for feminist and sociological critiques of science. A plausible and common explanation for the scarcity of studies on gender and physics points to the marginality of women in the laboratory. Utilizing examples from communities of high-energy physicists one could see that female scanners in the physics laboratories of the fifties—the "scanning girls," as they were called—became the "unskilled", cheap work force of the physics laboratory who took the blame for experimental failures and remained invisible in cases of successes. Their presence at the laboratory became so characteristic of the discipline that health officials started inquiries about their work conditions. Examples such as the above have contributed to the current understanding of the laboratory as gendered space.

This specialization will be organized around the epistemological question of how experimental cultures in the physical sciences are constructed—and reshaped—by scientists of different gender. At the same time we will explore the different ways experimental practices affect men and women in laboratory sciences. The focal point here is what it means to be an experimenter and how this identity—a heavily gendered one—has been performed in different experimental cultures, that is ensembles of scientific practices employed by gendered subjects who share a certain material and epistemic style of research. We will focus on local research traditions, institutional structures, disciplinary affiliations, national research policies, and philosophical commitments in order to understand how experimental processes have been historically gendered. As scientific objects and technical conditions are inextricably interconnected, we will read the history of the physical sciences through laboratory instruments, materials, and bodily, gendered skills. Drawing also on recent studies of the city not merely as a location where science occurs but also as a setting that affects the evolution of science, its methods, instrumentation, concepts, and objects of research, we will look at the interconnection of gender and the urban setting of laboratory spaces.

Theoretically this specialization draws on gender theory, laboratory studies, anthropological studies of science, as well as on recent work on science and the city,

and on the material culture of the laboratory, including not only instruments and artifacts but also these materials that stand on the intersecting worlds of commodities and epistemic objects.

Examples of thesis topics: Gender and the architecture of science, the gendering of experimental skills, a gender perspective in high-energy physics, space and gender in university physics, artifacts, instruments and materials in the physics laboratory

Responsible for the specialisation: GPHPST

Contact: Maria Rentetzi

4.2.4. Specialization 4: Sociality and Materiality at a National Level

This specialization focuses on studies of national European histories, exploiting science and technology studies in a dialogue with historical sociology and broader historiographical theories of nation-state formation. STS ideas of social constructivism, ANT, reflexivity, boundary objects, trading zones and of intellectual appropriation of technology will be deployed in an attempt to bridge the gap from their inherently micro-level of description to the meso- and macro-level of history and political theory.

Our experience of similar projects in the case of Greece – through the study of its infrastructure evolution, the specific character of scientific establishments and curricula, the function of engineers, the military and leading politicians (all in relation to general historiography) – suggests that new light can be thrown on old questions, and that totally new questions may arise. We intend to extend our research to issues such as public health, consumption, the built environment, social measuring processes**,** natural history and archaeology – that is, to cover more components of the material and symbolic construction of a state.

Amidst a traditional cultural milieu, the Greek state was conceived in 1830 *ab initio* as modernist and European. Its development resulted in a social formation that differs from the idealized Western prototype, despite the fact that modernizing policies were actively pursued during most periods since its constitution. The study of material components, neglected for the most part till recently, can contribute to determining its specificity. Studies on relevant research projects, concerning the formation of other European nations from a comparative perspective, may constitute topics of several program diploma theses.

Contact: Michalis Assimakopoulos

4.2.5 Master's (MA) Thesis in a Selected Specialisation

The Master's thesis is written in a selected area of specialisation, following completion of the introductory course work. Students select their thesis topic, empirical subject matter, and methods of research and analysis in consultation with a thesis supervisor and advisors. Theses are evaluated according to procedures and criteria for assessment established within ESST.

Apart from appropriate and relevant academic content, the main features of a thesis should include: clearly specified objectives, effective planning, a thorough search of literature, critical use of data, appropriate and sound analysis, thoughtful interpretation of results in relation to existing knowledge, critical assessment of findings, consideration of the agenda for further research, and scholarly presentation of the work.

5. Teaching and Supervision

The main format of course instruction is the academic seminar. Seminars may take different forms, but they generally stress group discussion and rely on student initiative, making them responsive to the articulation of students´ interests. The approach to instruction is to some extent subject-based, but a strong emphasis is placed on relevance to students´ chosen research topics.

Course work is largely intended to assist students with articulating and development their research topics. Group discussion and student participation play central roles. Thus, students are expected to assume some part of the responsibility for defining the agenda of discussion within courses and for organising and carrying out seminars and workshops.

Thesis supervision will be fitted, as much as possible, to the particular research interests of individual students. To this end, supervisors and advisors may be drawn from all the member organisations within GPHPST, and not only from among the instructors associated with the two thesis specialisations described above.

In addition to a thesis supervisor, students may also seek the assistance of one or more additional advisors. In such cases, there will be a thesis committee consisting of the supervisor and advisor(s), within which the supervisor will have the primary responsibility and authority.

6. Admission Requirements

The program is designed to provide post-graduate training for students of all backgrounds, including: social sciences, natural and engineering sciences, and the humanities. The program is interdisciplinary and draws on recent research results from a number of disciplines, such as sociology, economics, history, geography, philosophy, etc.

The ESST Program at GPHPST is an option to advanced GPHPST students or graduates. A maximum of 5 of them may be admitted to the program each year.

Criteria for admission are the previous qualifications of the applicants, including the quality of the student’s previous GPHPST work.

To be eligible for GPHPST, students must have a good command of English. The necessary level of proficiency is specified on their GPHPST application form.

Upon completion of the first semester, students must be evaluated and obtain a letter of recommendation from their 'home' academic unit -- i.e., GPHPST -- before they can enter another ESST university in order to complete the ESST programme. Evaluation for this purpose will follow the normal practice of GPHPST -- i.e., the grading scale(s) discussed below.

Students applying to take part or all of the second semester in the International Master's Programme in Science, Technology and Society in Europe must meet the initial entry requirements of the programme. These requirements are indicated in the Syllabus for courses comprising the first semester of the programme. In addition to meeting these initial entry requirements, applicants to the second semester must also have completed either the first semester of studies in the program or the equivalent thereof.

7. Terms of Reference, Regulations and Procedures

7.1 Provision

The organisation offering the program is GPHPST.

The place of study is at GPHPST during the first semester (Autumn Term) and at one of the ESST academic units, including GPHPST, during the second semester (Spring & Summer Terms).

The programme is classified as a MA degree level offering.

The rate of study is full-time.

Instruction in the first semester relies heavily on literature-based lectures and seminars. Greek and English are the languages of instruction and examination.

In the second semester, instruction starts with a course that introduces to the area of specialization and continues with individualised reading, tutoring, and research supervision. English is the language of instruction and examination.

7.2 Tests and Examinations

Examinations will take the form of various kinds of essay assignments that may be complemented by oral or written tests. In the case of the master's thesis, however, no oral examination is required.

In the first semester, the main form of examination for each seminar is a major written assignment -- an essay, research paper, or project report -- which is due to be submitted at the end of the module. This assignment may be complemented by other oral or written examinations -- such as, for example, in-class presentations.

In the second semester, examination procedures differ between the course that introduces to the area of specialization and MA thesis. The former are evaluated solely on an internal basis; the latter involves both internal and external examiners.

Thesis assessment is based only on evaluation of the written text, according to the ESST assessment system. The examiners are drawn from two ESST universities. One of them is the thesis supervisor.

Grading

The program and the courses are graded on the following scale:

1-10 (grades 5 and above in the three seminars are required)

10=A+

9=A

8=A-

7=B+

6=B

5=B-

4=C+

3=C

2=C-

1=D+

0=D

In the second semester, evaluation of masters' theses will follow the ESST assessment system. Successful completion of the thesis will lead to the award of an ESST diploma. Award of the diploma depends on a positive evaluation of the written thesis according to the ESST assessment system, as well as satisfactory fulfilment of entrance requirements and successful completion of all the courses within the program that are prerequisites for writing and submitting the thesis.

7.3 Diploma Certificate

Students will also be awarded a diploma from ESST.

Decisions concerning the award of ESST diplomas are based on the evaluation of written theses according to the ESST assessment system.

7.4 Assessment of the Thesis

Both the schedule for completion of theses and the procedures and criteria for the evaluation of theses follow the guidelines established by the European inter-university association on Society, Science and Technology (ESST). In the case of students who are not enrolled within ESST, some aspects of the guidelines will be modified appropriately.

For students enrolled within ESST, theses are evaluated by 'markers' at two ESST academic units. Subsequently, the International Curriculum Co-ordinator of ESST makes all final decisions concerning the revision and acceptance of theses and the eventual award of diplomas.

If a student studies at a different ESST university on an exchange basis during the second semester, a 'first marker' is appointed from that university and a 'second marker' from the student's first semester or 'home' university. If the student remains at the same university, the 'second marker' is then appointed from another ESST university.

In order to write and submit a thesis within ESST, students must demonstrate that they have fulfilled the programmes entrance requirements satisfactorily, and that they have successfully completed all of the prerequisite courses within the programme.

The eventual award of an ESST diploma depends on a positive evaluation of the written thesis according to the ESST assessment system.