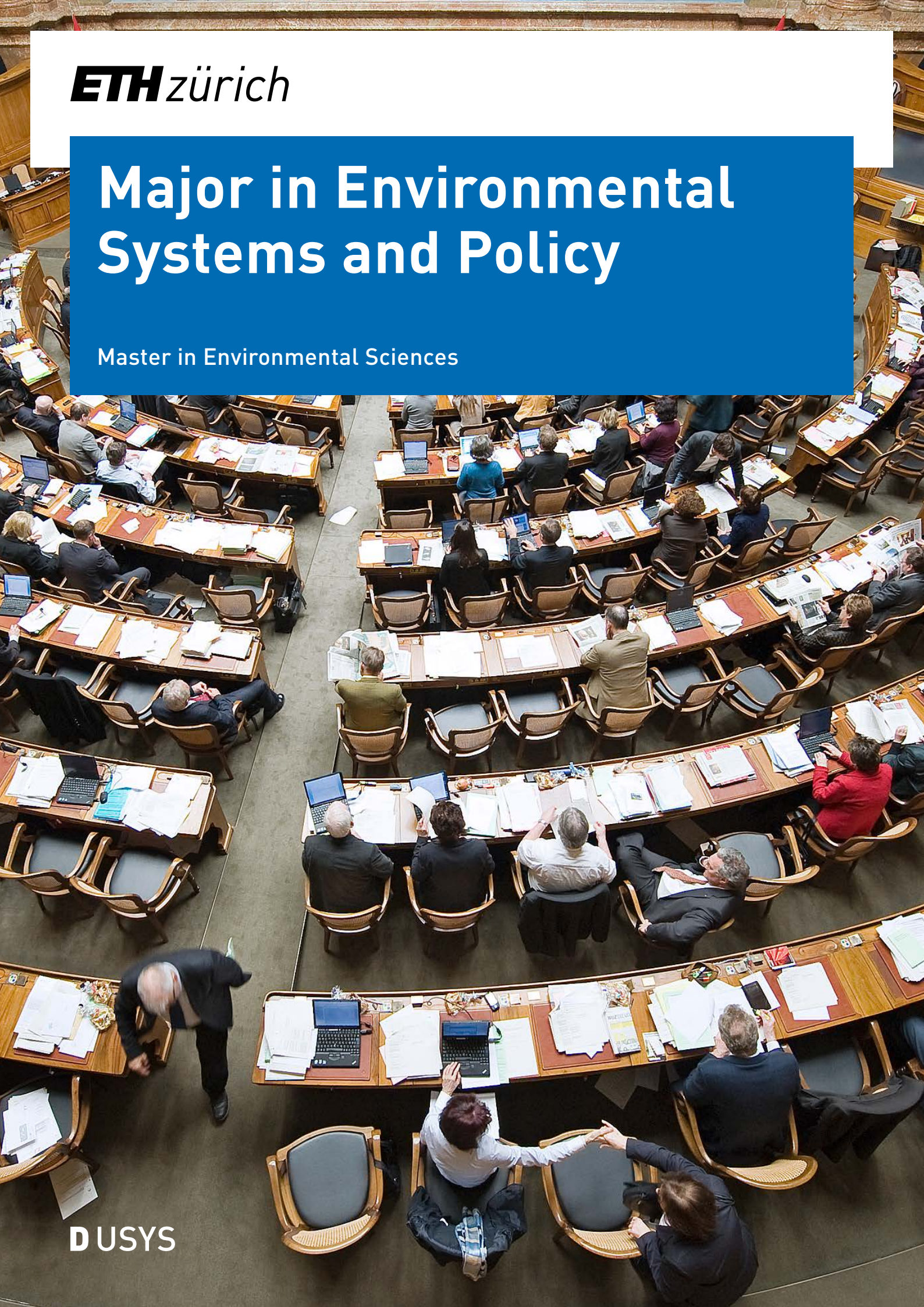


ETH zürich

Major in Environmental Systems and Policy

Master in Environmental Sciences



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Why a Major in Environmental Systems and Policy?

The major in Environmental Systems and Policy (ESP) trains students to analyse environmental problems in order to design effective policies to address current issues. The ESP major stands out among the other majors in Environmental Sciences as it not only provides the training and tools to help solve environmental problems but also an understanding of the human aspect of such problems and the associated solutions.

The core of the ESP major is a training in policy analysis applied to environmental problems. In this program, “policy” means a strategy to address a particular problem, typically designed and implemented by governments, but also by civil society and, in some cases, by the private sector. Analysing such policies involves a full consideration of their likely effects – whether they will adequately solve the problem at hand, and whether they will create another problem in the process – as well as their political and social acceptability. While this training is grounded in the relevant aspects of social science theory, the emphasis is on practical application in today’s world.

Policy analysts are increasingly in demand in public agencies, non-governmental organizations, and the private sector, such as in consulting firms. With their skill set, they often advance into leadership roles. Graduates of the Environmental Sciences degree program with the ESP major will stand out because of their unique qualifications, combining an in-depth understanding of environmental systems science with the knowledge and skills required to identify solution strategies that are environmentally, technically, and socially robust.

Structure and content

The ESP major is organized as 120 credit points (CP), of which 40 are devoted to the core of the major, 30 are for an internship, and 30 for the MSc thesis. The Environmental

Module I: Theory	Module II: Modelling	Module III: Engagement
Environmental systems	Conceptual system mapping	Historical and political context
Technological systems	Numerical simulation	Group problem solving
Human and organisational behaviour	Multivariate statistics	Communication with stakeholders

Sciences curriculum requires one further to choose a number of elective courses, which can include one or two minors of 10 CP. The core of the ESP major program (40 CP) is structured in three modules, each with a minimum of 9 and a maximum of 22 CP. Within each module, there is one mandatory subject.

Modules (40 CP)

Module 1: Theoretical foundations for environmental policy (at least 9 CP)

The first module covers the theoretical foundations based on relevant social sciences, including economics, political science, and psychology. Within this module, students will learn to appraise the relevant criteria by which to judge a policy’s success, as well as the factors that influence its political and social acceptability.

Required course: Environmental governance

Module 2: Modelling and statistical analysis (at least 9 CP)

This module consists of modelling, in terms of both simulating how the behaviour of a system may respond to a



future policy intervention and evaluating data that reveal the effects of past interventions. The module has three core elements: conceptual system mapping, computer simulation and modelling, and statistical analysis, including econometrics.

Required course: Modelling environmental policy problems

Module 3: Policy engagement (at least 9 CP)

This module forces students to step out of the ivory tower of scientific theory and into the real world in which decisions are made. Such engagement concentrates on three elements: the historical and current political context for environmental policy, group problem solving, and communication with stakeholders.

Required course: Environmental policy case studies

Electives (20 CP)

Students must complete a total of 20 elective credits, but ten of those have to focus on a particular environmental system, forming a distinct minor. Appropriate minors include analytical chemistry, biogeochemistry, physical glaciology, catchment management and natural hazards,

soil-plant relations and use, agricultural plant production and environment, sustainable energy use, and life cycle assessment. Students also have the flexibility to propose a set of courses from an area of environmental systems science for which no minor currently exists (e.g. concerning climate systems) to satisfy this requirement.

The rest of the elective courses can be chosen freely, according to interest.

Internship (30 CP)

In the internship, students gain practical experience in a professional environment.

Master thesis (30 CP)

The Master thesis enables the students to apply the course content to an actual problem concerning environmental policy. Its duration is six months.

www.usys.ethz.ch/env/master →

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