QUALIFICATION PROFILE: MSc. in Science, Technology and Policy (STP)

INTRODUCTION

Scientific and technological innovation are important forces in society overlapping strongly with policy: they often give rise to new problems that policy makers must solve, while also providing key elements of many solutions. The purpose of the MSc. in Science, Technology and Policy (STP) is to provide the set of skills needed to effectively engage with public policy, where sound judgment requires both an understanding of science and technology, but also depends on the appraisal of the institutional, social, and political context within which problems arise. The STP training equips ETH graduates embarking on technical careers to advance into leadership positions with significant decision-making authority, as well as to move directly into the growing number of jobs focused on the analysis of existing public policies and the systematic evaluation of proposed options. To enable graduates to successfully engage with ill-defined problems, the STP degree program provides both an understanding of policy processes and institutions and a set of methods for framing problems and evaluating options.

1. DOMAIN-SPECIFIC KNOWLEDGE

Graduates with a MSc. degree in Science, Technology and Policy have knowledge of the phenomena of strategic decision-making in complex institutional environments, and of the institutional processes and organizational structures constituting the public sector at national and international levels.

In addition to core competencies in their home departments (natural science or engineering), they have mastered concepts in public policy, which merges both theoretical economics, political science, law, decision-theory, social-psychology, and ethics, as well as skills in empirical data analysis, cultural studies, and communication.

2. SKILLS

Graduates with a MSc. degree in Science, Technology and Policy have developed the following skills:

a. Analytical skills

- Ability to analyze the interests of stakeholders, their competing definitions of public problems, and the range of options that are possible given institutional, budgetary, and physical constraints;
- Ability to model the effects of public policies, including the laws and regulatory changes implemented to further them, in outcomes that are of concern to stakeholders, including economic welfare and other indicators of quality of life;
- Ability to evaluate the effects of past policies based on sound empirical methods; and
- Application of sound scientific methods in environments of ill-defined problems and competing interests.

b. Design skills

- Ability to design effective policy proposals from the perspective of their organization or employer based on an appreciation of public decision-making institutions, organizations, and processes;
- Have acquired skills in integrated problem solving, innovative and systems-based thinking, and professional communication and knowledge-management; and
- Mastered non-sectorial integrated thinking combining environmental, economic and technical skills.

3. PERSONAL AND SOCIAL SKILLS

Graduates with a MSc. degree in Science, Technology and Policy:

- Have leadership and consensus building skills that will allow them to work in challenging institutional environments, appreciating and being able to work with competing goals, priorities, and preferences;
- Have the abilityto actively listen and learn from a wide variety of stakeholders, and to communicate knowledge and insights in a manner that is respectful and strategic.
- Have the ability to communicate and interact in multiple languages; and
- Have the ability to understand how their own values, beliefs, and moral judgments fit within the patterns to be observed in society, linking these to different preferences for public policies and their implementation strategies.