

MGT-450

**Technology, sustainability and public policy**

Aklin Michaël

| Cursus  | Sem.     | Type |
|---|----------|------|
| Digital Humanities                                | MA1, MA3 | Opt. |
| Management, Technology and Entrepreneurship minor | H        | Opt. |
| Managmt, dur et tech                              | MA1      | Obl. |
| Managmt, tech et entr.                            | MA1, MA3 | Opt. |
| Minor in Engineering for sustainability           | H        | Opt. |
| Minor in digital humanities, media and society    | E        | Opt. |

|                            |                 |
|----------------------------|-----------------|
| Language of teaching       | English         |
| Credits                    | 4               |
| Session                    | Winter, Summer  |
| Semester                   | Fall            |
| Exam                       | Written         |
| Workload                   | 120h            |
| Weeks                      | 14              |
| <b>Hours</b>               | <b>4 weekly</b> |
| Courses                    | 2 weekly        |
| Exercises                  | 2 weekly        |
| <b>Number of positions</b> |                 |

**Summary**

Technology is a driver of long-term growth but it can also undermine sustainable development. This course introduces microeconomic models of market and collective action failures, models of complex systems, as well as policy portfolios to address these issues.

**Content**

Technology is a critical driver of long-term welfare. Yet unconstrained technological development is testing the limits of planetary boundaries and is the source of severe environmental issues. Technological solutions to such problems often exist in theory but are frequently deployed too slowly to avoid harm. This course (1) identifies the connections between technology, welfare, and sustainability, (2) models the sources of both market and collective action failures as well as system-level breakdowns, (3) analyzes the demand for sustainable technologies and studies why firms, households, and societies sometimes reject them, and (4) identifies the optimal design of policies to address these challenges.

**Keywords**

sustainability, sustainable development, technology adoption, economic development, public policy, economics, society, politics

**Learning Prerequisites****Recommended courses**

Passing familiarity with microeconomic models is useful, but not essential.

**Learning Outcomes**

By the end of the course, the student must be able to:

- Synthesize knowledge on sustainability, technology, and public policy
- Model social processes
- Design solutions to complex problems
- Assess / Evaluate solutions to complex problems
- Assess / Evaluate public policies
- Sketch system models

**Transversal skills**

- Demonstrate a capacity for creativity.
- Demonstrate the capacity for critical thinking
- Communicate effectively with professionals from other disciplines.

### Teaching methods

The course will include lectures, in-class exercises, and discussions.

### Expected student activities

Students are expected to attend the class and participate in discussions and exercises.

### Assessment methods

Final exam (40%)

Exercises and shorter assignments (60%).

### Supervision

|              |     |
|--------------|-----|
| Office hours | Yes |
| Assistants   | Yes |
| Forum        | No  |

### Resources

#### Virtual desktop infrastructure (VDI)

No

#### Notes/Handbook

Notes will be distributed in class.

#### Moodle Link

- <https://go.epfl.ch/MGT-450>