

HUM-387

How technology shapes the workplace of the future

Lalive Rafael

Cursus	Sem.	Type
Humanities and Social Sciences	BA6	Opt.
UNIL - HEC	E	Obl.

Language of teaching	English
Credits	2
Session	Summer
Semester	Spring
Exam	During the semester
Workload	60h
Weeks	14
Hours	2 weekly
Lecture	2 weekly
Number of positions	70

Summary

Artificial intelligence, big data, and advances in computing power have triggered a technological revolution that may have enormous bearing on the workplace and the labor market. This course provides you with tools to analyze these developments, and discuss their impact on our lives.

Content

The class unites more than ten professors from three different institutions to provide comprehensive and in-depth coverage of the future of our workplaces.

Topic 1: TECHNOLOGY

1. Where we are: Introduction and Overview: This class introduces the topic and invites you to think about the benefits and challenges of the recent technological developments.

Bettina Büchel, IMD and **Rafael Lalive**, UNIL

2. Artificial intelligence: What machines can do now and in the future: This class provides an overview and use cases on what AI can do today.

David Atienza, EPFL.

3. Internet of things and the link to the evolved workplace: The internet is connecting everything today. How we use this technology and what it can do for us.

David Atienza, EPFL

4. Technology and culture: We will discuss how digitization has affected demand and supply in cultural markets, and what to expect with the next wave of technological change.

Christian Peukert, UNIL

Topic 2: LABOR MARKET

1. Jobs and occupations: This class will discuss how technology affects different jobs and show how the employment structure changed in Europe over the last few decades.

Daniel Oesch, UNIL

2. Augmentation of Work: While much attention has been dedicated to the impacts of technology-enabled automation of work, how about if the work of the future would not just be a race against the machine? This class introduces the augmentation of work as an alternative approach and discusses management and design implications.

Benjamin Müller, UNIL.

3. Human resources policies: New technologies have shaped the way firms recruit, select and manage their employees today. We will look at this trend in the area of recruitment (e.g., the use of AI to identify job candidates on social media, automated video interview analysis) and discuss the scientific evidence for the usefulness and accuracy of these new tools and practices.

Franciska Krings, UNIL

4. Education curricula: This class argues that soft-skills, e.g. cooperation, emotional intelligence, etc, will become more important in the future workplace, because they are comparably less likely to be automated.

Camille Terrier, UNIL

5. Wiring the workplace to run it more efficiently: The Quantified Self movement, which tries to enhance human intellect and physiology by means of technology, has inspired an increasing number of organizations to invest in sensors and wearable computing devices for improving well-being of their personnel or as means for anticipating potential health and safety risks at work. Certainly, this has not been done because of altruistic reasons only, but also

to respond to possible financial losses from work absenteeism. In the lecture, we are going to discuss the opportunities and risks of a "sensored workplace" and deliberate about possible normative, technological, and organizational safeguards.

Tobias Mettler, UNIL

6. Visual extensions in the workplace: Augmented and Virtual Reality: The session will discuss various visual extensions (e.g., augmented and virtual reality) at the working place. The perspective that we will use is a behavioral one, which means that we will discuss the individual and social psychological consequences of using these visual extensions.

Tobias Schlager, UNIL

Topic 3: GOVERNMENTS

1. New challenges for ethics: The digital transformation of our society disrupts our routines providing new ways of acting in the world. We can do things we could not do before because of new information technologies. Facebook might know better what we believe, value and are tending to do even before we know it ourselves. Amazon can organize the surveillance of their employees with means, repressive regimes would have dreamed about 20 years ago. New ways of acting provoke ethical questions, for which we need new answers. This session will give an overview over the ethical dimension of the digital transformation with regards to how corporations interact with their employees and other stakeholders.

Guido Palazzo, UNIL

2. How to provide social protection? This session will focus on the way in which digitalisation and AI tools are impacting on the delivery of social protection. Can AI help jobless people find employment? Can it help governments spot benefit fraudsters? We will discuss a few examples, focusing in particular on the potential for increased efficiency and the risks associated with these new technologies.

Giuliano Bonoli, UNIL

3. Legal challenges: Digitalization triggers multiple legal questions. Many of them have to do with the changing work processes, especially in the fields of Taxation, Social Security, Torts and Employment Law. This section studies how to adapt laws to the digitalized work world by focussing on Social Security issues, like social protection for platform workers, safety at work, sustainable financing of social benefits, etc.

Bettina Hummer, UNIL

4. Final conference: What have we learned? What are new challenges? Where should technological developments be steered towards?

Bettina Büchel, IMD and **Rafael Lalive**, UNIL

Keywords

Artificial Intelligence, Technological Revolution, Ethics of Workplace Modifications, Embedded Systems, Augmented Work

POLY-perspective :

- interdisciplinary perspective
- global perspective

<https://www.epfl.ch/schools/cdh/cdhs-vision/>

Learning Prerequisites

Required courses

None

Recommended courses

None

Important concepts to start the course

Technological abilities to replace or augment work, Economics, Prediction. Basis of analysis and calculus to understand the complexity of different AI and ML algorithms.

Knowledge of structure and use computers and electronic systems, including smartphones, smartwatches, tablets, etc.

Learning Outcomes

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

- Discuss augmentation and automation
- Critique challenges for individuals, firms, and governments
- Elaborate ethical challenges
- Sketch basics of the digital transformation

Transversal skills

- Assess one's own level of skill acquisition, and plan their on-going learning goals.
- Summarize an article or a technical report.
- Communicate effectively with professionals from other disciplines.

Teaching methods

- Lecture
- Class discussions

Expected student activities

- *Participate in process of knowledge creation*
- *Discuss learnings from class*
- *Write up summaries of topics*

Assessment methods

All students:

- Discussion (individual task): Participants submit a question or a point for discussion on the class material before or after class on the Moodle forum. You submit at least 6 questions or inputs for the total of 12 units.
- Essay (group task): Participants write a short essay/reflection paper of 900 (+/-10%) words in mixed groups of up to three individuals. Essays contain a summary of all the material for one topic, and a specialisation in two classes of the topic (e.g. topic technology, classes culture and artificial intelligence). Essays cover the learnings from the class. There is a total of three essays. Each essay will be graded.

In addition, UNIL students:

- Synthesis (individual task): UNIL students earn 3ECTS from this class and hand in a synthesis (of about 1200 words) of their insights from the class (which can be based on their three essays, established in groups).

Your total grade is the average of all grades you receive.

Supervision

Office hours	No
Assistants	Yes
Forum	Yes

Resources

Virtual desktop infrastructure (VDI)

No

Bibliography

- Hummer, Bettina, AI: Legal and ethical challenges, chapter 4, in AI & the Future of work, 2019.
- Mettler, T. and J. Wulf, Physiolytics at the Workplace: Affordances and Constraints of Wearables Use from an Employee's Perspective. Information Systems Journal, 2019. 29(1): p. 245-273.
- Oesch, D. and Piccitto, G. (2019) The polarization myth: Occupational Upgrading in Germany, Spain, Sweden and the UK, 1992-2015, Work and Occupations 46(4): 441-469.
- Steuer, Jonathan (1992), Defining virtual reality: Dimensions determining telepresence, Journal of Communication, 42 (4), 73-93.
- Waldfoegel, J. (2017). How digitization has created a golden age of music, movies, books, and television. Journal of Economic Perspectives, 31(3), 195-214.
- Zuboff, S., The Age of Surveillance Capitalism. 2019, London: Profile Books.

Références suggérées par la bibliothèque

- [The future of work : robots, AI, and automation / Darrell M. West \(2018\)](#)
- [Zuboff, S., The Age of Surveillance Capitalism](#)
- [AI, the future of work? : work of the future! : on how artificial intelligence, robotics and automation are transforming jobs and the economy in Europe](#)

Moodle Link

- <https://moodle.unil.ch/course/view.php?id=12734>