UNIVERSITY OF LUCERNE

FACULTY OF HUMANITIES AND SOCIAL SCIENCES

LUCERNE MASTER IN COMPUTATIONAL SOCIAL SCIENCES (LUMACSS)

THE LUCERNE MASTER IN COMPUTATIONAL SOCIAL SCIENCES

The Lucerne Master in Computational Social Sciences (LUMACSS) is a rigorous two-year programme that has been specially designed to meet the challenges of the digital age. Supported by swissuniversities, the module on Computational Sciences and Digital Skills will offer LUMACSS the opportunitiy to develop a vision stating that stringent inquiry into contemporary society benefits immensely from an in-depth knowledge of the digital world and of recent computational advances.

LUMACSS is inspired by the idea that only crossing disciplinary boundaries enables one to fully understand the rapidly evolving social and political dynamics, and to devise the best solutions to real-world problems. LUMACSS students thus develop a well-grounded knowledge of social science fundamentals before acquiring the statistical, computational and programming skills needed to competently approach the digital age.

The hallmark of LUMACSS is its blending of the social sciences with computational and data science. Coursework includes courses on Big Data, Internet Law, and the Digital Economy from such diverse disciplinary perspectives as economics, political science, sociology, law and history. The programme guides students towards mastering social science concepts. The Computational Sciences and Digital Skills module builds the knowledge and skills needed to join the next generation of state-of-the-artist social scientists. The rich diversity of courses and workshops includes R and Python programming, machine learning and text mining.

The programme's structure is tailored to real-world needs and challenges: the flexible LUMACSS curriculum enables students to further enhance their skill set, through attending more workshops and courses, to gain first-hand work experience, through implementing their newly acquired knowledge in an internship, or to transform their ideas into actual products or applications, through pursuing a capstone project.

LUMACSS thus invites applications from social science graduates interested in the manifold aspects and effects of digitization and who seek to strengthen their statistics and computation skills. The programme is also very well suited to computational sciences graduates, eager to learn how to best apply their computational skills to social sciences data and research questions.

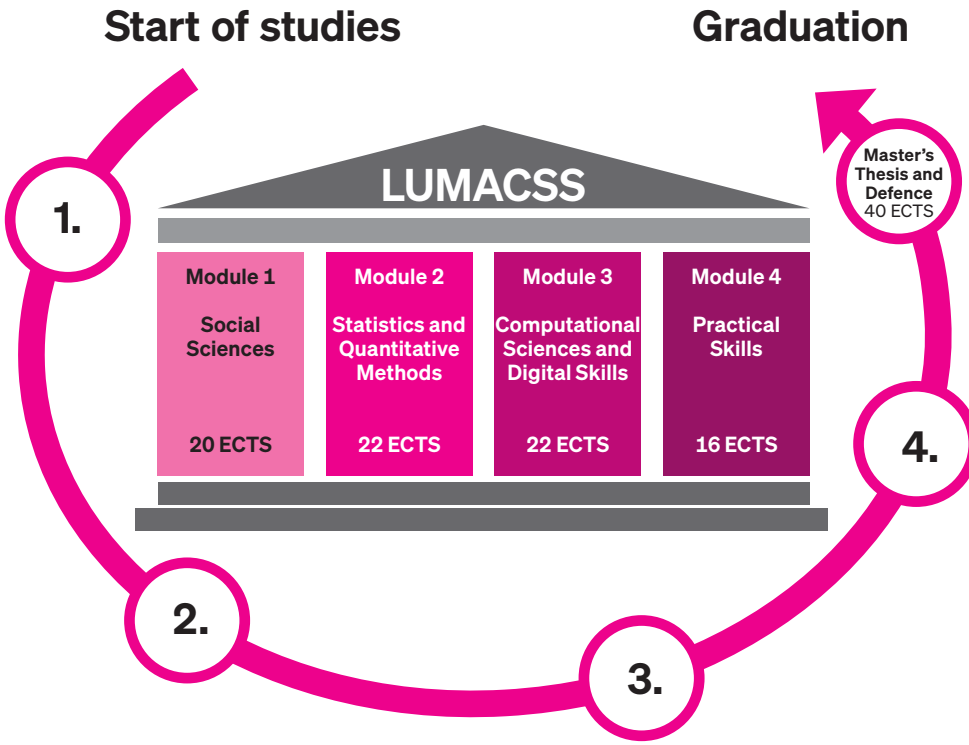
PROGRAMME

LUMACSS comprises 120 ECTS and consists of four modules:

1. Social Sciences
2. Statistics and Quantitative Methods
3. Computational Sciences and Digital Skills
4. Practical Skills

Students pursue their own research interests in two seminar papers, both part of the first two modules, and in their final master's thesis.

The final module (Practical Skills) offers students three routes to best prepare their professional future: 1. Digital economy internship; 2. Capstone project (focused on proposing an original idea and developing a real product or application); 3. Further specialization (advanced courses and workshops).



COURSE OFFERINGS AND FACULTY

The four LUMACSS modules offer a broad perspective on the various aspects and effects of the ongoing digitization of modern societies, economies and polities. Among many course offerings, here are a few exemplary ones:

Public Opinion, Political Behaviour and Communication
LUMACSS provides insights from political science into the impact of the Internet and of voting advice applications on the shaping of public opinion, political communication and political behaviour. Coursework explores the "Frontiers of Public Opinion" and the "Foundations of Political Behaviour and Communication."

PROF. DR. ALEXANDER H. TRECHSEL
Department of Political Science

Computational Social Sciences are burgeoning. However, they often put the emphasis on either "computational" or on "social." LUMACSS brings the two together – equally. We are pioneering with this unique MA among Swiss Universities.

Big Data, Metrics in Advertising and in Journalism, and the Digital Economy
LUMACSS addresses a wide range of issues and concerns such as Big Data, Metrics in Journalism, Relational Sociology, the Sociology of Algorithms, and the Digital Economy. Coursework includes "Big Data – Challenges and opportunities from a sociological perspective," "Relational Sociology," "The Sociology of Algorithms" and "Digital Payments."

PROF. DR. SOPHIE MÜTZEL
Department of Sociology

New and old, large data sets invite us to revisit social science questions using new methodological tools. For that, knowledge on how the social worlds is structured is needed.

COURSE OFFERINGS AND FACULTY

Statistics, Research Design, Data Analysis and Visualization
LUMACSS coursework explores designing quantitative studies and applying statistical methods to data analysis and visualization. Introductory and advanced courses on general programming languages such as R, the replication of published scientific studies and hands-on data analysis are integral to the programme.

DR. ANDREA DE ANGELIS
Department of Political Science

A wealth of information must not lead to a poverty of attention. To this end, LUMACSS will teach you how to tame your (big) data by relying on your most powerful analytical tool – your reasoning.

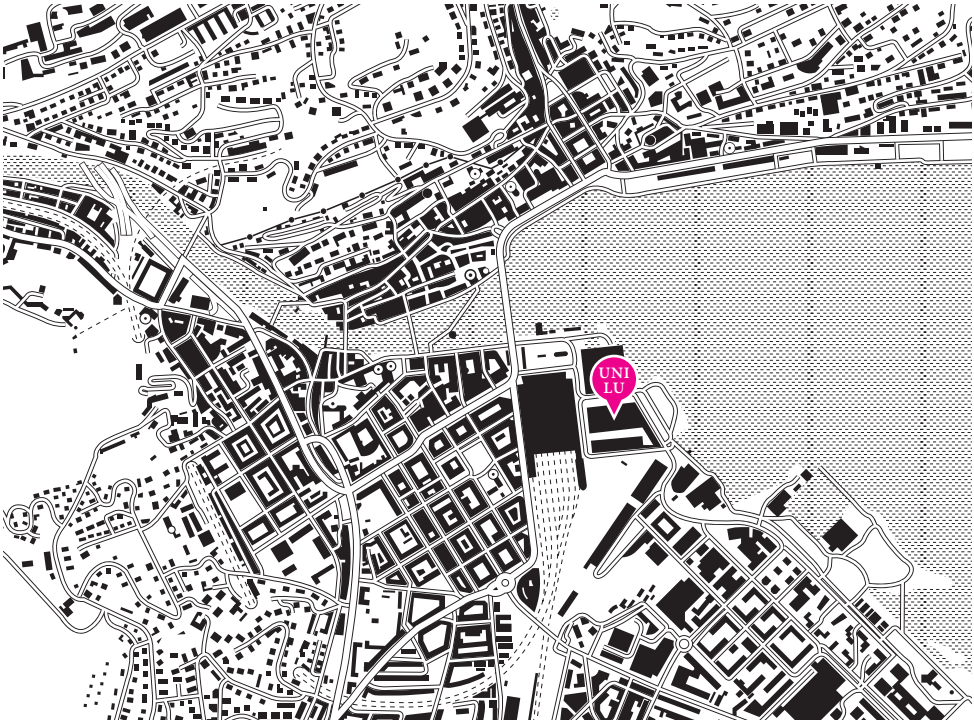
Internet Law, Intellectual Property Law, and International Media Law
Digitization processes have affected the law in various ways. LUMACSS coursework covers "Internet Law," "International Intellectual Property Law," and the "International Law of Contemporary Media." Delivered by the Faculty of Law, these courses complement the core programme and contribute to building the unique LUMACSS skill set.

PROF. DR. MIRA BURRI
Faculty of Law

Law can act both as an enabler and an inhibiter of innovation and technological adoption in a society. Understanding the regulatory environment is thus critical and LUMACSS students will be uniquely positioned to gain this knowledge.

Computational Sciences
The core interdisciplinary programme will be taught by University of Lucerne faculty. In addition, external faculty, specialists from top universities, will be teaching a range of courses, among others, on Python Programming, Scraping and Data Mining, Machine Learning, Cloud Computing, Data Management and Computation Science Skills. This module is supported by swissuniversities.

swissuniversities



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