DH-500  
**Computational Social Media**  
Gatica-Perez Daniel

<table>
<thead>
<tr>
<th>Cursus</th>
<th>Sem.</th>
<th>Type</th>
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</thead>
<tbody>
<tr>
<td>Digital Humanities</td>
<td>MA2, MA4</td>
<td>Obl.</td>
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<td>Digital Humanities</td>
<td></td>
<td>Opt.</td>
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<td>Learning Sciences</td>
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<thead>
<tr>
<th>Language</th>
<th>English</th>
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<tbody>
<tr>
<td>Credits</td>
<td>4</td>
</tr>
<tr>
<td>Withdrawal</td>
<td>Unauthorized</td>
</tr>
<tr>
<td>Session</td>
<td>Summer</td>
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<td>Semester</td>
<td>Spring</td>
</tr>
<tr>
<td>Exam</td>
<td>During the semester</td>
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<tr>
<td>Workload</td>
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<tr>
<td>Weeks</td>
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<tr>
<td>Hours</td>
<td>3 weekly</td>
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<tr>
<td>Lecture</td>
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<tr>
<td>Practical work</td>
<td>1 weekly</td>
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**Summary**

The course integrates concepts from media studies, machine learning, multimedia and network science to characterize social practices and analyze content in sites like Facebook, Twitter and YouTube. Students will learn computational methods to infer individual and networked phenomena in social media.

**Content**

The course will present a human-centered view of computational social media. It uses a multidisciplinary approach and integrates concepts from media studies, multimedia information systems, machine learning, and network science to present the socio-technical fundamentals needed to understand user motivations and behavior, and analyze content in platforms like Twitter, Facebook, Instagram, and YouTube. Students will become familiar with computational approaches for classification, discovery, and interpretation of phenomena in social media.

The content is organized around trends in social media, introducing computational models of general applicability.

1. **Introduction.** A brief history of social media. Networked individualism.
4. **Shooting.** Photo sharing and tagging. Media, user and community analysis enabled by photo sharing. Ephemeral social media.
6. **Watching.** YouTube as a media phenomenon. Multimedia techniques (audio, video, text) to analyze social video.
7. **Crowdsourcing.** Models to analyze crowdsourced tasks and workers. Uses of crowdsourcing in social media research. Crowdsourcing and social participation.
8. **Society.** Social media from a global perspective. Effects of social media on society.

**Keywords**

Social Media, Social Networks, Multimedia, Machine Learning.

**Learning Prerequisites**

**Required courses**

Students from other disciplines can talk to the instructor during the first lecture of the course.

**Recommended courses**
Learning Outcomes
By the end of the course, the student must be able to:
• Apply socio-technical fundamentals to understand motivations, characterize behavior, and analyze content of social media users and communities

Transversal skills
• Plan and carry out activities in a way which makes optimal use of available time and other resources.
• Assess progress against the plan, and adapt the plan as appropriate.
• Evaluate one’s own performance in the team, receive and respond appropriately to feedback.
• Take account of the social and human dimensions of the engineering profession.
• Manage priorities.
• Write a scientific or technical report.

Teaching methods
Lectures
Paper presentations
Group discussions
Project design, development, and implementation

Expected student activities
Homeworks
Paper presentations
Group discussions
Group project

Assessment methods
Multiple methods during the semester: homeworks; paper presentation and discussion, and group project.

Supervision
Office hours Yes
Assistants Yes
Forum No

Resources
Websites
• https://people.epfl.ch/daniel.gatica-perez?lang=en&cvlang=en

Moodle Link
• https://go.epfl.ch/DH-500