DEPARTMENT OF "International Communication and Media Research"
COURSE SYLLABUS

Course Details				
Code	**Academic Year**			**Semester**
ICMR102	2021-2022			2
Title	**T**	**A**	**L**	**ECTS**
Introduction to Computational Communication Research	2	0	0	5

Language	English					
Level	**Graduate**	x	**Postgraduate**			
Department / Program	International Communication and Media Research					
Forms of Teaching and Learning	Face-to-Face (60%), Distance Learning (40%)					
Course Type	**Compulsory**	x	**Elective**			
Objectives	Scholars nowadays have the unique opportunity to collect digital trace data to analyze behavior of human beings. However, the volume and heterogeneity of "big data" constitutes a challenging task for social scientists. This course will focus on communication science providing at the same time the basic understanding of computational methods that can be employed to collect and process "big data". Important topics, such as theoretical background, ethics and availability of digital data, will be reviewed. Students will get an introduction to the methods of data collection, data wrangling and computational text analysis, which has become an essential skill for every communication specialist.					
Content	To build a theoretical basis, we will hold general discussions based on home readings. To understand data collection, data wrangling and various computational text analysis methods, we will do exercises in R. Basic introduction to programming in R will be provided. Knowledge received in the class can be further applied in the field of journalism, marketing, and advertising.					
Prerequisites	Knowledge on empirical methods and quantitative data analysis					
Coordinator	–					
Lecturer(s)	Jun.-Prof. Dr. Emese Domahidi					
Assistant(s)	-					
Work Placement	–					

Recommended or Required Reading	
Books / Lecture Notes	Salganik, Matthew J. 2017. Bit by Bit: Social Research in the Digital Age. Princeton, NJ: Princeton University Press. Kuhn, M. & Silge, J. (2021). Tidy Modeling with R. Wickham, H., & Grolemund, G. (2016). R for data science: Import, tidy, transform, visualize, and model data. O'Reilly Media, Inc. Further Literature will be announced in the course.

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Other Sources	–
Additional Course Material	
Documents	–
Assignments	–
Exams	–

Course Composition		
Social Sciences		70%
Natural Sciences		%
Engineering Sciences		30%
Expert Knowledge		%

Assessment

Activity	Count	Percentage (%)
Midterm Exam		
Quiz		
Assignments	3	30
Attendance	14	10
Recitations		
Projects		
Final Exam	1	60
	Total	**100**

ECTS Points and Work Load

Activity	Count	Duration	Work Load (Hours)
Lectures	14	2	28
Self-Study	14	3	42
Assignments	3	10	30
Presentation / Seminar Preparation			
Midterm Exam			
Recitations			
Laboratory			
Projects			
Final Exam	1	50	50
		Total Work Load	**150**
		ECTS Points (Total Work Load / 30)	**5**

Learning Outcomes

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1	Students have a basic understanding of computational methods in communication science with the focus on digital text data
2	Students understand the theoretical implications and ethics of computationale methods and digital data
3	Students have a basic knowledge of data collection, data wrangling and selected computational text analysis methods
4	Students have a basic knowledge of software (e.g. R) for for computationale text analysis
Weekly Content	
1	Introduction and theoretical background
2	Ethics in the digital age
3	Basics of programming in R
4	Gathering digital data: Access via API, scarping and open data. Challenges and opportunities.
5	Gathering digital data: Access via API, scarping and open data. Challenges and opportunities.
6	Management and cleaning of "big" textual data.
7	Management and cleaning of "big" textual data.
8	Descriptive analysis of textual data: Wordclouds and distributions.
9	Dictionary-based approach to computational text analysis: Sentiment analysis and other topics of interest. Creation, application and validation of dictionaries.
10	Dictionary-based approach to computational text analysis: Sentiment analysis and other topics of interest. Creation, application and validation of dictionaries.
11	Supervised machine learning: Data, features, modeling and validation.
12	Supervised machine learning: Data, features, modeling and validation.
13	Outlook on advanced methods of computational text analysis.
14	Wrap up & Q&A

Contribution of Learning Outcomes to Program Objectives (1-5)

	P1	P2	P3	P4	P5	P6
1	5	5	5	5	5	5
2	5	5	5	5	5	5
3	5	5	4	5	4	5
4	5	5	4	5	4	5

Contribution Level	1: Low 2: Low-intermediate 3: Intermediate 4: High 5: Very High

https://obs.tau.edu.tr/oibs/bologna/progProfile.aspx?lang=en&curSunit=6028

Compiled by:	Jun.-Prof. Dr. Emese Domahidi
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