**Information and Communication Systems** **(with Analytics and Audience Measurement Tools for Digital Media Workshop)**

## Prof. Matteo Tarantino

# Information and Communication Systems and Elements of Teaching Strategies (with Methodologies and Educational Technologies for Communication and Media Practical Activities)

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***COURSE AIMS AND INTENDED LEARNING OUTCOMES***

The course aims to educate students on the basics of understanding, designing and operating complex information and communication systems, through the coordination of digital and analogue platforms and technologies. The course develops around a theoretical axis as well as an applied one through a  project work. The course is accompanied by a workshop on the techniques of measuring the performance of online platforms (analytics). **The course is delivered in English.**

*INTENDED LEARNING OUTCOMES*

**Knowledge and understanding**

At the end of the course, students will be able to: understand the sociological and economic mechanisms of innovation; Understanding the structure and operation of complex information and communication systems; Recognize the investment mechanisms operated by stakeholders; Understand the role and function of systems related to environmental communication; Understand the paradigm of the datafication, and its applications; Understand the role and impact of algorithmic guidance tools in these systems, with particular reference to recommendation engines.

**Ability to apply knowledge and understanding**

At the end of the teaching, students will be able to: articulate plans related to complex information and communication systems; Identify and recognise the vulnerabilities of these systems; Choose and apply appropriate automation strategies for specific communicative objectives; Assessing the value of data for different stakeholders in different scenarios.

***COURSE CONTENT***

* Background Theories: Convergence, platform, system, content, and resources. Theories of innovation (1 lesson).
* Conceptualizing a complex multi-platform information & communication system. The relationship between resources and technology. The social modelling of Technology: Recognizing the active role of users  (1 lesson).
* The logic of the prototype and the iterative construction of platforms and systems. Approaches to prototyping and development. (1 lesson).
* The role of data. Data value, data collection, data management. Data streams, databases, APIS. Approaches to the datafied society. Data/institution/user ratio (2 lessons).
* The sustainability of a system. Multi-stakeholder models. Read the relationship between resources invested and resources acquired (1 lesson).
* Content: Relationship between designed and user generated content. Conflict management. User communities (1 lesson).
* The role of the cultural variable. Digital culture and technology. Digital and China. (1 lesson).
* Complex systems for communication: the communication of environmental risk. (1 lesson)

***READING LIST***

S.F. Wamba & L. Carter*. Social media tools adoption and use by SMEs: An empirical study*. In Social media and Networking: Concepts, methodologies, tools, and applications (p. 791-806). 2016.

McCann, M., & Barlow, A. *Use and measurement of social media for SMEs.* Journal of Small Business and Enterprise Development, 22(2), 273-287. 2015.

G. Adomavicius & A. Tuzhilin. *Toward the next generation of recommender systems: A survey of the state-of-the-art and possible extensions*. IEEE Transactions on Knowledge & Data Engineering 6 (2005): 734-749.

H. Wickham, *Tidy Data,**Journal of Statistical Software, 59*(10), 1 - 23. 2015.

N. Marres, E. Weltevrede, *Scraping the Social? Issues in live social research*. Journal of Cultural Economy, 6(3), p. 313-335. Goldsmiths Research Online. ISSN 1753-0350.

M. Tarantino. *Uncertainty in the Air: Communicating Urban Air Pollution*, in Z. Krajina & Stevenson  (edited by) The Routledge Companion to Urban Media and Communication, Routledge, New York (2019).

E. Harwitt, "*WeChat: Social and political development of China’s dominant messaging app*." Chinese Journal of Communication 10.3 (2017): 312-327.

Further bibliography will be indicated during class.

***TEACHING METHOD***

Frontal lecture, supervision of project works. Students are encouraged to take their personal computer to class.

***ASSESSMENT METHOD AND CRITERIA***

* 1. During each class, students will present in small groups the assigned readings and will be evaluated on the basis of their presentation. Students without regular attendance (<75%) will have to hand in written summaries of the readings. This part will weight 20% on the final grade.
	2. At the end of the course, students will have to hand in their project work. This will comprise a working demo as well as a report with objectives, scopes, budget and expected outcomes. This project will be evaluated on the basis of effectiveness, creativity and sustainability. Evaluation will weight 40% on the final course grade
	3. Students will be evaluated through a final written test on the whole course bibliography. This test will weight 40% on the final grade.
	4. The evaluation of the outcomes of the workshop contributes to the final grade with a bonus ranging from minus two to positive two grades.

In order to pass the exam, all parts (project work, test, exercise) will have to be evaluated with sufficient grades.

***NOTES AND PREREQUISITES***

* 1. During each class, students will present in small groups the assigned readings and will be evaluated on the basis of their presentation. Students without regular attendance (<75%) will have to hand in written summaries of the readings. This part will weight 20% on the final grade.
	2. At the end of the course, students will have to hand in their project work. This will comprise a working demo as well as a report with objectives, scopes, budget and expected outcomes. This project will be evaluated on the basis of effectiveness, creativity and sustainability. Evaluation will weight 40% on the final course grade
	3. Students will be evaluated through a final written test on the whole course bibliography. This test will weight 40% on the final grade.
	4. The evaluation of the outcomes of the workshop contributes to the final grade with a bonus ranging from minus two to positive two grades.

In order to pass the exam, all parts (project work, test, exercise) will have to be evaluated with sufficient grades.

Further information can be found on the lecturer's webpage at http://docenti.unicatt.it/web/searchByName.do?language=ENG or on the Faculty notice board.

# Analytics and Audience Measurement Tools for Digital Media Workshop

## Dr. Davide Carbonini

***COURSE AIMS AND INTENDED LEARNING OUTCOMES***

The workshop aims to illustrate and explain the functioning of the most important statistical analysis software for the monitoring of the traffic coming from websites or mobile apps: Google Analytics.

The written test at the end of the workshop aims at the production of a structured written report, to be carried out by each student on an individual basis, containing all the necessary and sufficient information to illustrate and discuss the collected data.

Therefore, students will be asked to write a document to be submitted to a fictitious customer, exactly as if they were real providers of web analysis services.

***COURSE CONTENT***

The workshop is divided into 2 parts:

a) Introduction and alignment of the technical skills required to understand the data collected by the software

b) Training on the use of the software ‘Google Analytics’

***TEACHING METHOD***

The first part of the workshop will be characterised by a traditional teaching method, based on frontal lectures. Then, it will be held at the computer lab of the Faculty.

***ASSESSMENT METHOD AND CRITERIA***

The assessment will be based on different criteria:

● the students’ understanding of the information presented in class related to the functioning of the software and the procedures for the interpretation of the data it provides

● their dedication and inclination to the topics explained, to be demonstrated through a personal reinterpretation of the information aimed at the production of a written text

● the quality of the graphics, the orthography, and the contents of the report written by each student

The final score will be expressed in thirtieths, and the pass mark is 18.

***NOTES AND PREREQUISITES***

In order to be considered as attending students, it will be necessary to attend at least half of the hours + 1 (at least 11 hours).

A selection of pre-recorded lectures will be made available for the students who cannot attend classes.

Further information can be found on the lecturer's webpage at http://docenti.unicatt.it/web/searchByName.do?language=ENG or on the Faculty notice board.

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# Information and Communication Systems and Elements of Teaching Strategies (with Methodologies and Educational Technologies for Communication and Media Practical Activities)

## Prof. Matteo Tarantino

***COURSE AIMS AND INTENDED LEARNING OUTCOMES***

The course aims to educate students on the basics of understanding, designing and operating complex information and communication systems, through the coordination of digital and analogue platforms and technologies. The course develops around a theoretical axis as well as an applied one through a  project work. The course is accompanied by a workshop the theory and technique of communication teaching. **The course is delivered in English.**

*INTENDED LEARNING OUTCOMES*

Knowledge and understanding

At the end of the course, students will be able to: understand the sociological and economic mechanisms of innovation; Understanding the structure and operation of complex information and communication systems; Recognize the investment mechanisms operated by stakeholders; Understand the role and function of systems related to environmental communication; Understand the paradigm of the datafication, and its applications; Understand the role and impact of algorithmic guidance tools in these systems, with particular reference to recommendation engines.

Ability to apply knowledge and understanding

At the end of the teaching, students will be able to: articulate plans related to complex information and communication systems; Identify and recognise the vulnerabilities of these systems; Choose and apply appropriate automation strategies for specific communicative objectives; Assessing the value of data for different stakeholders in different scenarios.

***COURSE CONTENT***

* Background Theories: Convergence, platform, system, content, and resources. Theories of innovation (1 lesson).
* Conceptualizing a complex multi-platform information & communication system. The relationship between resources and technology. The social modelling of Technology: Recognizing the active role of users  (1 lesson).
* The logic of the prototype and the iterative construction of platforms and systems. Approaches to prototyping and development. (1 lesson).
* The role of data. Data value, data collection, data management. Data streams, databases, APIS. Approaches to the datafied society. Data/institution/user ratio (2 lessons).
* The sustainability of a system. Multi-stakeholder models. Read the relationship between resources invested and resources acquired (1 lesson).
* Content: Relationship between designed and user generated content. Conflict management. User communities (1 lesson).
* The role of the cultural variable. Digital culture and technology. Digital and China. (1 lesson).
* Complex systems for communication: the communication of environmental risk. (1 lesson)
* **The course will also address topics relative to the teaching of media and communications. Students will have to obligatorily complete the laboratory of Methodology and Technologies for Media and Communication Teaching.**

***READING LIST***

S.F. Wamba & L. Carter*. Social media tools adoption and use by SMEs: An empirical study*. In Social media and Networking: Concepts, methodologies, tools, and applications (p. 791-806). 2016.

McCann, M., & Barlow, A. *Use and measurement of social media for SMEs. .*Journal of Small Business and Enterprise Development, 22(2), 273-287.2015.

G. Adomavicius & A. Tuzhilin. *Toward the next generation of recommender systems: A survey of the state-of-the-art and possible extensions*.IEEE Transactions on Knowledge & Data Engineering 6 (2005): 734-749.

H.Wickham, *Tidy Data,Journal of Statistical Software, 59*(10), 1 - 23. 2015.

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Further bibliography will be indicated during class.

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***TEACHING METHOD***

Weekly lectures, supervision of coursework.

***ASSESSMENT METHOD AND CRITERIA***

Students will be guided to the individual realization of an information/communication system whose quality (measured in terms of efficacy, robustness and sustainability) is 2/3 of the exam evaluation. The remaining 1/3 of the evaluation will depend on a closed-response test on a selection of the bibliography. Moreover, the evaluation of the exercise contributes to the final vote in the measure of-2/+ 2 points. The laboratory of methodology and didactic technologies will be assessed with an endorsement.

In order to pass the exam, all the elements (System, test, exercise, laboratory) will have to reach at least the sufficiency

***NOTES AND PREREQUISITES***

Students must have a basic understanding of the basic theories of communication systems; A basic understanding of concepts such as the nature and function of algorithms, the distinction between data/information/knowledge and between source/executable code. Students are encouraged to take their personal computer to class.

***Contact hours***

*Further information can be found on the lecturer's webpage at http://docenti.unicatt.it/web/searchByName.do?language=ENG or on the Faculty notice board.*

# Methodologies and Educational Technologies for Communication and Media Practical Activities

## Dr. Roberta Bova

***COURSE AIMS AND INTENDED LEARNING OUTCOMES***

The course aims to identify and problematise specific contexts and application tools for education. Therefore, communication and media will represent both the context and the subject of the study. The aim is to outline some elements at the basis of teaching activities, that usually remain unnoticed and unexplored in their everyday use. This exercise will allow students to discover, in the teaching context, new points of view and new ways to manipulate and combine objects and techniques.

***COURSE CONTENT***

Introduction: terminology as the focus of the work: technology, methodology, didactics, communication, media.

Technology: *techné* + *logos*; the discourse of technology; technology, art, artifice; instrument and *tool.*

Educational tools: schools, school furniture, writing.

Human tools: students, teachers, the *setting*.

***READING LIST***

Ivan Illich, Celebrare la consapevolezza, Neri Pozza 2020.

Additional textbook for non-attending students (cf. below): Walter J. ong , *Oralità e scrittura*, il Mulino 2014.

***TEACHING METHOD***

Frontal lectures

***ASSESSMENT METHOD AND CRITERIA***

The course will include a final assessment based on a written practical activity (about 10 slides) produced by students and assigned by the lecturer responsible for the practical activities; in this assignment, students will have to individualise the practical activities carried out in group during the workshop. Those who do not attend at least 75% of the lectures will be considered as *non-attending students*: in this case, the assignment will consist in a review of the two textbooks assigned (about 10 thousand characters). The assessment of the assignment will result in a mark expressed in thirtieths.

***NOTES AND PREREQUISITES***

Considering the short duration of the practical activities, class attendance is highly recommended. There are no prerequisites for attending the course.

Further information can be found on the lecturer's webpage at http://docenti.unicatt.it/web/searchByName.do?language=ENG or on the Faculty notice board.