UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

COURSE SYLLABUS

Information and Knowledge Management

2627-1-F6303M003-F6303M003-1

Learning objectives

Knowledge and understanding
The course aims to introduce students to the fundamentals of corporate information systems, the main web technologies (social media and others) supporting digital services (public and private) and corporate strategies, and the main data analysis technologies. Students will acquire in-depth knowledge of data management techniques, information extraction mechanisms and knowledge creation to support business decisions. They will also gain a sound understanding of the main IT methods and tools used by businesses and public institutions, of data management and retrieval techniques, and of the software used for analysis and decision support.

- Applied knowledge and comprehension skills.
  Students participate in practical exercises with data analysis software, on cases to be studied individually or in groups using web technologies, aimed at producing documents for evaluation.
  In addition, the course enables students to learn how to use text analytics software on real data. Through the development of group projects, students will learn how to retrieve data, clean and analyse it and then present the results.
  Students will also be able to manage structured and unstructured data, query different information sources and use software tools for knowledge extraction to support decision-making processes.

Autonomy of judgement
Through the analysis of data, students are called upon to make judgements and evaluate corporate communication or marketing strategies based on web technologies. Classroom discussions and lecturer feedback on projects support the development of the ability to independently evaluate business cases.

Communication skills
Students have to present group projects orally in front of colleagues and lecturers, developing clear, concise and effective communication skills. During interactive lectures and case discussions, active participation and discussion is encouraged.

Learning skills

The course provides students with methodological and practical tools that foster the ability to learn independently in the field of information systems and digital technologies. Through hands-on exercises and group projects, students learn how to explore new sources, keep up to date with emerging technologies, and transfer the acquired competences to different contexts and problems. This supports the development of a lifelong learning approach, essential to cope with the continuous evolution of digital services and data analysis methodologies.

Contents

- Information Systems
- Service Science
- Social Media
- Big Data
- CRM
- Social Media Marketing
- Social Media Analytics
- Text Mining and Text Analytics
- Artificial Intelligence

Detailed program

1 Service Science (SSME)
1.1 Digital services and KIBS

2 Business Information Systems
2.1 Operational Support Information Systems
2.2 Management Information Systems
2.3 CRM

3 Social Media
3.1 Social Media Marketing
3.2 Social Media Analytics

4 Big Data
4.1 BI and Big Data Analytics

5 Artificial Intelligence
5.1 Machine learning

6 Unstructured Data Processing Techniques
6.1 Text Mining with software (Orange)

7 Text Mining workshop

Prerequisites

Basic IT skills are required, as well as familiarity with the Office suite and the ability to understand technical texts in

Italian.

Teaching methods

The course is delivered in Italian and includes lectures and exercises.
The lectures are dedicated to the study of the theoretical topics related to the course.

The exercises are aimed at using tools to analyze unstructured data (texts), in particular to perform Text Mining techniques on data scraped from the web.

In detail:

- 16 2-hour lectures delivered in face-to-face delivery mode;
- 8 2-hour tutorials in interactive face-to-face mode.

During the exercises, the lecturer starts with a part in which concepts are exposed (delivery mode) and then opens up an interaction with the students that defines the next part of the lesson (interactive mode).

Assessment methods

The verification method is based on a written test.

The written test takes place at the computer and it consists of 2 open (short essays) and 10 closed questions with multiple answers (TRUE/FALSE). Open questions aim to evaluate the reasoning and critical discussion skills of a topic. The closed questions aim to evaluate the preparation on all the topics of the course. Open questions have a greater weight in the calculation of the final grade.

The evaluation is focused on the student's ability to answer to specific questions by referring both to the theoretical and practical aspects (through examples) connected to the requested topic.

The test is common for both attending students and non-attending students.

There are no intermediate tests.

During the course, students attending the course are invited to undertake a group project and discuss it in class. The project is not compulsory; however, those who complete it – once it has been submitted and discussed – will receive a few extra marks in the exam.

The final assessment takes into account:

- the accuracy of the theoretical knowledge presented;
- the ability to apply concepts to real-world cases;
- the ability to reason and use the language of the discipline;
- the ability to interpret results derived from data analysis.

To achieve a pass mark, students must demonstrate adequate knowledge of the course’s core topics. Higher marks are awarded to students who demonstrate full mastery of the topics, critical thinking and the ability to make connections between the various topics covered.

Textbooks and Reading Materials

1. M. Mezzanzanica, D. Cavenago, “Scienza dei servizi – Un percorso tra metodologie e applicazioni”, Springer-Verlag Italia, (2010) [ISBN: 978 88 470 1363 6];

2. V. Cosenza, "Social media ROI", Apogeo, 2012, ebook available on internet, chapters: 1, 2, 4, 5 (the basic concepts).
   Further material (slides and papers on specific topics) is available on the elearning page of the course.

Sustainable Development Goals

INDUSTRY, INNOVATION AND INFRASTRUCTURE