UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

COURSE SYLLABUS

Information Systems for Knowledge Management

2526-2-F5701R010

Course title

INFORMATION SYSTEMS FOR KNOWLEDGE MANAGEMENT

Topics and course structure

The Digital Workplace: ICT for communication, collaboration, and organizational development. After analyzing the main instruments to support knowledge management, the course aims to outline the organizational impact of the digital tools techniques and practices for learning, communicate and collaborate inside organizations.

Objectives

1. Knowledge and Understanding
   By the end of the course, students will have acquired:
   • An in-depth knowledge of the main theoretical models that describe the nature, role, and functioning of information systems and knowledge management in complex organizations.
   • The ability to critically understand the relationship between information systems, organizational processes, and human resource management, including in the context of digital transformation.
2. Applying Knowledge and Understanding
   Students will be able to:
   • Apply models and tools to analyze and evaluate information systems, dematerialization processes, CRM, ERP, and other digital solutions in relation to organizational needs.
   • Select and use appropriate ICT methods and tools to support decision-making processes, intellectual capital management, and organizational change.
3. Making Judgements

By the end of the course, students will be capable of:
• Formulating independent and well-founded assessments of the information systems adopted within an organization, taking into account technological, social, and economic aspects.
• Identifying critical issues and opportunities associated with the introduction of digital technologies in knowledge management and human resource management.

4. Communication Skills
   During and at the end of the course, students will be able to:
   • Present in written form, using appropriate technical language, concepts, problems, and solutions related to information systems and knowledge management processes.
   • Effectively interact with industry specialists and various organizational roles using digital communication and collaboration tools.
5. Learning Skills
   The course fosters:
   • The development of autonomous learning abilities through exercises, case studies, and the use of digital materials.
   • The ability to stay up to date with ongoing technological innovations in the field of information systems and knowledge management, including in English.
   • A critical thinking attitude and the autonomous re-elaboration of acquired knowledge, including from an interdisciplinary perspective.

Methodologies

- Teaching time: 48 hours.
    - In-class lecture (to introduce theoretical models, tools and methods of organizational analysis);
- Interactive teaching: 8 hours.
- Videoconferencing, Online discussion; Online activities (to facilitate the learning and understanding of the relationship between technology and the organization and communication skills);
- Analysis of case studies (to train the ability to apply knowledge and models related to technology adoption within organizations).

Remote activities are not planned, except in exceptional circumstances.

Online and offline teaching materials

- Presentations;
- Lecture notes;
- Study cases;
- Videos.

Programme and references

Information and IT systems

- Resources and business processes
- Components and main types of information systems
- Identify the information system and the computer system

- Main problems related to the management of information systems
- Networks and the Internet
- Outsourcing
- ERP
- IT solutions
- Office automation
- Decision support
- Company databases
- Supply chain
- CRM
- Dematerialization of documents
- Examples of company management contexts

From data to knowledge

- Data and information
- Software life cycle
- Knowlwdge worker
- Classification and characteristics of information systems

Organizational models and IT solutions
THE SECI MODEL
MODELS OF SOCIAL INTERACTION
THE LIFE CYCLE OF KNOWLEDGE
ICT SOLUTIONS FOR THE MANAGEMENT OF INTELLECTUAL CAPITAL
TREATMENT OF SILENT AND IMPLIED KNOWLEDGE

- Knowledge acquisition applications
- Communication, collaboration systems and groupware
- Adaptive systems and multimodal and multichannel interfaces
  THE TREATMENT OF KNOWLEDGE IN SEMI OR NON-STRUCTURED FORMAT
- Natural language processing
- Information retrieval
- Knowledge discovery in text
- Document and content management
- Case based reasoning
  THE TREATMENT OF KNOWLEDGE IN STRUCTURED FORMAT
- Database, data warehouse and OLAP
- Knowledge discovery in data: data, web, log, usage, mining
  THE BASIC INFRASTRUCTURE
- Internet and intranet
- Enterprise knowledge portal
  TECHNOLOGIES FOR EXTRACTION AND INTEGRATION
- Integration of heterogeneous information sources
- Wrapping crawling
- Information extraction
  TECHNOLOGIES FOR THE REPRESENTATION OF KNOWLEDGE
- Ontologies and knowledge representation and reasoning
- Workflow
- Web services and service oriented architecture
- Agents
  COMPLEX APPLICATIONS
- Help – desk applications and customer relationship management
- Business process re – engineering
- Decision support systems

- E-learning

Materials provided by the teacher.

Further bibliographic references:
Boccardelli, P., Ricciardi, F. (2020). Sistemi informativi aziendali. McGraw-Hill Education.
Morabito, V. (2019). Business Technology: Tecnologie e strategie digitali per l'impresa del futuro. Springer.
Di Carlo, E., & Frigenti, S. (2022). Gestione della conoscenza e innovazione organizzativa. FrancoAngeli.
Grandori, A. (2018). Organizzazione e conoscenza. Strutture, reti e sistemi cognitivi. Il Mulino.
Di Carlo, E., & Frigenti, S. (2022). Gestione della conoscenza e innovazione organizzativa. FrancoAngeli.

Assessment methods

ADMISSION RULES:
No distinction is made between attending and non-attending students. There are no preliminary activities or other tasks required to access the exam.

TYPE OF EXAM:
The exam is written and aims to assess the knowledge acquired on the topics covered during the course. It is administered through a web-based platform.

EXAM PROCEDURES:
The classroom is typically traditional (not equipped with computers). Students must have their own device (computer or tablet) with internet access to complete the exam. During the exam, students may only access the exam website.

EVALUATION CRITERIA:
The exam is graded on a scale of 30 points.
A questionnaire consisting of multiple-choice and open-ended questions is delivered through a dedicated platform.
The exam is a timed test with a duration of 90 minutes.
Multiple-choice and open-ended questionnaire. Timed test, 90 minutes, to be completed on a computer.
The student receives written confirmation via email from the instructor regarding participation in the test, with specific instructions. It consists of a questionnaire, accessible through a link—same for all participants—sent via email, along with a password provided at the time of the test. It includes multiple-choice questions and 4 open-ended questions, for a total of 29 questions. 1 point for each correct answer.
The open-ended questions are assessed later. Since these are open answers, it's best to develop a well-structured and content-rich response.
The evaluation of open-ended responses is at the instructor's discretion.
The questions (and answers) are distributed by the system.
The instructor does not know the questions being presented.
The platform used is a website, and navigation should be treated as such. At the bottom of the page is the "submit" button to transmit the data.
The results of the multiple-choice questions are immediately available. If time runs out, the system still saves the test and will evaluate it. The instructor can monitor delivery in real time but cannot view the answers.
Only after the system is unlocked can the instructor access and download the data for evaluation. In such cases, a report with the outcomes of the questions—already known—can be sent.
Once results are reviewed, the site can be closed and the session ended.
The questionnaire format, as agreed upon in form and timing, is considered suitable for assessing the objectives of this course.
Multiple-choice questions measure specific and punctual knowledge, while open-ended questions are the closest approximation to an oral exam. In this case, a more general understanding of the subject under investigation is assessed, allowing the examinee to construct and articulate their reflections as they see fit. This demonstrates the

sensitivity to identifying the most distinctive elements.

Office hours

Contact by e-mail to the ddress sergio.moriani@unimib.it.
Videoconference if necessary.

Programme validity

Two Academic Years

Course tutors and assistants

No one.

Sustainable Development Goals

AFFORDABLE AND CLEAN ENERGY