

Name of the course: INFPHD650 Multicriteria decision making (complex exam preparatory)	Total credits:
CODE: (Neptun)	
Type: Optional	
Total hours of per semester: lecture: 2 practice: 1 consultation: Other:	
Type of testing: midterm Other:	
Semester:	
Description Multi-criteria decision making provides students with strategies they can use to make the optimal selection of materials to meet complex design problems when they are faced with a vast range of available materials. These methods have been applied to materials selection, demonstrating significant potential for tackling complex design problems.	
Literature	
Compulsory Multi-criteria decision analysis for supporting the selection of engineering materials in product design by Ali Jahan, Kevin Edwards, Marjan Bahraminasab. Elsevier. Recommended Multi-Criteria Decision Making by Jitesh J. Thakkar. Springer Case studies from various journals. Competencies •Ability to formalize complex technical problems, to analyze theoretical and practical background, and to provide adequate solutions. •Expertise in utilizing sources of technical information, their critical interpretation and evaluation, and the extraction of information relevant to the solution of a specific problem.	
Knowledge After completing this course, students will be able to apply various weighting and ranking methods to trade-off the performance of different materials on several conflicting properties.	

Competencies

- Expertise in the application of the concepts and methods of software technology in modeling of complex software and architecture design. Ability to develop applications with real-time requirements.
- Ability to formalize complex technical problems, to analyze theoretical and practical background, and to provide adequate solutions.
- Expertise in design, development, operation and management tasks in the domain of complex software systems and database management systems.
- Skills for cooperation and team work, and ability to take leading role.
- Ability for written and oral communication in English, using the technical terms and expressions of computer science. Ability to argue, to prepare reports, to read, understand and exploit scientific and technical material (e.g. books and papers).
- Expertise in utilizing sources of technical information, their critical interpretation and evaluation, and the extraction of information relevant to the solution of a specific problem.
- Ability to perform supervised scientific research, and skills required for post-graduate studies.

Attitude

- Attends professional, technological development related to their qualification.
- Commitment to critical feedback and self-assessment.
- Commitment to lifelong learning and receptivity to new IT competencies.
- Adopts and coordinates the ethical principles of work, organizational culture and research.
- Shares professional knowledge, mediates professional results.
- Mediates and implements eco-conscious behavior and social responsibility, helping them with IT tools.
- Commitment to quality standards and its IT tools.
- Open to initiate collaboration with IT and other specialists.

Autonomy and responsibility

- a) Takes responsibility for his professional decisions taken during his professional activities.
- b) Takes responsibility for observing and enforcing deadlines.
- c) Takes responsibility for own and fellow workers' work.
- d) In the case of operational critical IT systems, he/she can be assigned responsibility for development and operation, according to his/her professional competencies.