UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

COURSE SYLLABUS

Neurocognitive Aspects of Multisensory Communication

2627-2-E2006P018

Learning area

3: Techniques, tools, and technologies of communication.

Learning objectives

Knowledge and understanding

- Learn how to use all sensory modalities to communicate effectively in the fields of product design, marketing and media production.
- Learn the basic characteristics of new immersive communication technologies, in particular virtual reality and augmented reality, and their communication potential.

Ability to apply knowledge and understanding

- To deepen how the knowledge of the basic principles of neurocognitive functioning allow to improve communication in applied contexts.

Making judgements

- Development of the ability to critically analyze, evaluate and synthesize new and complex scientific ideas (also in relation to issues of international strategic relevance) through group discussions and possible seminar-type activities

Communication skills

- Development of the ability to communicate information, ideas, problems and solutions clearly and

consciously to specialist and non-specialist interlocutors and in different training and work contexts.
- Development of a solid ability to listen actively, to interact and to work in groups, including interdisciplinary ones, as well as to understand and critically analyze different points of view.

Learning skills

- Development of the ability to continue one's study/work path independently, strengthened by greater critical awareness and a renewed theoretical-conceptual and methodological sensitivity.

Contents

The topics of the course will concern the study of the different sensory modalities (sight, hearing, touch, smell, taste) in communication processes, with also reference to consumer neuroscience. Some persuasion strategies and the reason why they work will also be covered. The course will also address the use of the body in communication and the phenomenon of synesthesia (the use of sensory messages in one way to communicate aspects related to other sensory modalities). Another topic to-be-discussed in the course will be related to new immersive/multisensory technologies, in particular virtual and augmented reality and their use for communication and learning (even within multi-user contexts: metaverses). Examples taken from the research activity that takes place at Mibtec laboratories (www.mibtec.it) will be provided. In particular, projects related to behavioral change and environmental sustainability will be discussed. For all these topics, the neurocognitive aspects concerning the mechanisms involved will be addressed in order to give a more solid basis to the applied strategies adopted.

Detailed program

- Principles of multisensory integration and their neurocognitive foundations.
- The basics of consumer neuroscience.
- The use of synesthesia and multisensory interactions in product communication.
- Persuasive strategies conveyed by product characteristics and oriented towards behavioral change.
- The human body as a communication system and the concept of 'human augmentation'.
- Virtual and augmented reality technologies in modern communication.

Prerequisites

None.

Teaching methods

Presentation and analysis of themes through visual material.
Class discussion with experts in the field of interest for the course topics.
Group and individual works and assignments.
The course will be held in presence. Teaching will consist of lecture-based lessons, and also interactive classwork, discussion on scientific papers, group works and assignments. All lessons will contain at least a part of interaction with students.

Assessment methods

The exam includes a written test with multiple choices questions and an one or more open questions that requires a large and critical discussion on one topic of the course. The questions are aimed at ascertaining the effective acquisition of both theoretical knowledge and the ability to connect different aspects in the field of multisensory integration. The answers to the open question will be evaluated in terms of correctness of the answers, argumentative capacity, and analytic discussion of the topics of the course. For students who request it and that have passed the written test, an oral interview will be also made available, on all the topics of the course. For attending students 80% of the final grade will be based on the above evaluation. The remaining 20% will be based on the evaluations of group activities consisting of the development and presentation (10 minutes using ppt slides) of a project study in the field of multisensory communication. For non attending students the final grade will be based only on the written test (and on the optional oral interview).

Verification criteria and evaluation thresholds:

30 cum laude: excellent test, both in knowledge and in critical and expressive articulation.
30: excellent test; complete knowledge, well articulated and correctly expressed, with some critical insights.
27-29: good test; exhaustive and satisfactory knowledge; substantially correct expression.
24-26: fair test; knowledge present in the substantial points, but not exhaustive and not always articulated correctly.
21-23: sufficient test; knowledge present in a sometimes superficial way, but the general thread is understood. Expression and articulation are deficient and often inappropriate.
18-21: barely sufficient test; knowledge present but superficial; the thread is not understood with continuity. The expression and articulation of the speech present even significant gaps.

Textbooks and Reading Materials

The teaching material will be provided in class.

Recommended texts and materials:

- Spence, C. & Gallace, A. (2011). Multisensory design: Reaching out to touch the consumer. *Psychology & Marketing*, 28, 267-308.
- Velasco, C. & Obrist, M. (2020). *Multisensory Experiences: Where the senses meet technology*. Oxford: Oxford University Press.
- Lindstrom, M. (2010). *Brand Sense. Sensory Secret behind the stuff we buy*. Free Press.

Optional Readings

-Spence (2017). Gastrofisica: la nuova scienza del mangiare.
-Spence & Piqueras-Fiszman (2014). The perfect Meal: The multisensory science of food and dining

Sustainable Development Goals

INDUSTRY, INNOVATION AND INFRASTRUCTURE