Human-computer interaction

Credits: 4 Semester 4 Compulsory: No

Format	Lectures 20 h	Examples 12 h	Private study 68 h

Lectures: (A.Camurri; G.Volpe)(UG-ECN)

Objectives:

The course faces theories and techniques for the design of interactive systems and multimodal systems.

Contents:

Main topics include the following:

1. interactive real-time systems for audio-visual processing (incl. Exercises with the EyesWeb open software platform).
2. devices for human-machine interaction.
3. theories and techniques for GUI design. User-centered design.
4. Sketches. Storyboarding.
5. Predictive models: GOMS, keystroke modelling, Fitts's Law and its variants.
6. Evaluation of GUIs based on experimental psychology methods.
7. Psicophysical methods.
8. Examples: evaluation of input devices.
9. Visual and auditory displays.
10. Multimodal interaction.
11. Emotional interfaces, models of expressiveness and models of comunication of non-verbal content.
12. Information appliances. Invisible/Disappearing Computing. Tangible Bits. Ambient Intelligence.

Abilities: After completing this course the students will be able to design advanced multimodal systems for Human-Machine interface.

Assessment: 30% continuous assessment, 70% from end of semester examination

Recommended texts:

- Preece, Rogers, and Sharp, *Interaction Design*, Wiley, 2002,
- Schneiderman, *Designing the User Interface*, Addison Wesley, 3rd ed, 1998.
- J. Raskin, *The Humane Interface*, ACM Press, 2000.
- Cook, Music, Cognition and the Computerized Sound, MIT Press, 2001.

Further readings:

will be provided during the course