

# **CAP-5627 Affective Intelligent Agents (3 credits)**

## **Catalog Description**

This course is about building computers that can adapt to their user's emotions and enhance the user's experience when interacting with computers. It covers: design and implementation methods using artificial intelligence (AI) techniques, human-computer interaction (HCI) principles, emotion theories, applications, e.g. health informatics, education, computer games.

## **Prerequisite**

Graduate Standing.

## **Type**

Elective for CS Master and PhD students

Particularly relevant to the Intelligent Systems and Cognitive Science PhD tracks

## **Course Objectives**

Students learn about what are affective intelligent agents, why they are having such an impact on novel technologies, and how to design and build such affective intelligent agents from a variety of perspectives. This course is highly beneficial to students whose research interests are in intelligent systems, affective computing, emotion automatic recognition and simulation, virtual characters, artificial intelligence, HCI involving socio-emotional content (education, personal health informatics, games).

## **Sample Topics Covered**

- Emotion and human-computer interaction
- Physiology and neuroscience findings on emotion
- Affect recognition by machines
- Psychological aspects and theories of emotions
- Expression of emotion by machines/agents/synthetic characters
- Engagement measurement
- Responding adaptively to user's emotions
- Emotion-based affective-cognitive architectures
- Computer agents "with" empathy for emotional support
- Applications of affective intelligent agents
- Philosophical, social, and ethical implications of affective computing

## **Text**

- R. Picard. *Affective Computing*, MIT Press, 1997.
- K. Scherer, T. Banziger, and E. Roesch. *Blueprint for Affective Computing*. Cambridge University Press, 2010.
- D. Gokcay and G. Yildirim. *Affective Computing and Interaction. Psychological, Cognitive and Neuroscientific Perspectives*. IGI Global, 2011.
- A Collection of articles available online which may vary each year.

## **Last Update**

Christine Lisetti 9/17/2012