

**SHORT COURSE: Autonomous Agents and Multiagent Systems  
AS-84.Z, (3 cr)**

**Date / Time:** 17-21.5.2010 / 10:00 – 12:00

**Location:** Lecture room AS3 (1621), TUAS building, Aalto University, Otaniementie 17, 02150 Espoo

**Instructor:** **Professor, Dr. Kagan Tumer**  
Oregon State University  
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**Organizer:** Finnish Centre of Excellence in Generic Intelligent Machines (GIM)  
Aalto University

**Course overview:** This course provides an introduction to autonomous agents, and multiagent systems. Covered topics include collectives, swarms, coordination and applications such as robotics and traffic. Because this course covers a constantly evolving field, there will be a significant reading component in addition to the regular lectures.

**Prerequisites:**

- Basic understanding of learning systems
- Good programming skills, preferably in C/C++ or Java.

**Optional textbook:** *An Introduction to MultiAgent Systems*, by Michael Wooldridge. John Wiley and Sons; March 2002.

**Expected Outcomes:** By the end of the course students will be able to:

1. Assess and describe the system characteristics needed for a distributed autonomous system to reach system level goals.
2. Produce a reinforcement learning agent capable of goal driven behavior.
3. Select the proper multiagent framework for a given domain.
4. Derive agent utility/objective functions given a system level utility/objective function.
5. Read and assess research papers in autonomous agents and multiagent systems published in leading conferences (e.g., AAMAS -- Autonomous Agents and MultiAgent Systems Conference)

**Tentative Course Schedule:**

Date	Topic
17.5	Autonomous Agents
18.5	Multiagent Learning, System Characteristics for Coordination
19.5	Rewards for Coordination
20.5	Case: Traffic
21.5	Robotics+research topics

**Number of participants:** maximum 35, in the order of registration

**Further info and Registration :**

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