Group project

Credits: 6   Semester 2   Compulsory: Yes

Format	Lectures 15	Examples	Private study 110 h

Lecturers: (G. Garcia ; B. Steux ; Ph. Depincé) (ECN)

Objectives: The aim of this module is to provide students with the opportunity to apply their specialized knowledge to the solution of a real problem, and gain practical experience of the processes involved in the team-based design and testing of a robotic system. Each group, of three students, will define the system to be realized.

Contents:The course is divided into two parts:

1-Lectures about project management:

This lecture is based on the corpus of knowledge provided by the Project Management Institute; the PMBoK (Project Management Book ok Knowledge) and will comprise some practical works on a project management software.

- Introduction to project management (organization, process, …)
- Initiating, Planning, Executing, Controlling and closing a project,
- Risks evaluation and management: Human and organisational risks, Risks management.
- Professional Responsibility

2- Development of a robotic system with innovative function and structure. The system should be defined by the group and must make use of advanced sensors and control algorithms. Robots could be designed in order to participate in national or international robotic contests such as:

     Field robot contests ((Wageningen University NL), **www.fieldrobot.com**,

     Line Running challenge of the NASA: http://robotics.nasa.gov/students/running.php,

     Robocup, http://www.robocup.org/

     Autonomous Underwater Vehicle Competition (AUV),

              http://www.auvsi.org/competitions/water.cfm

     Drones contest, http://concours-drones.onera.fr/

The components and kits could be obtained from the following suppliers:

     http://www.robotbooks.com/robot-kits.htm,

     http://www.hobbytron.com/RobotKits.html,

     http://robotikitsdirect.com/,

     http://mindstorms.lego.com/eng/default.aspx,

     http://www.robotbuilders.net/.

     http://users.tpg.com.au/users/p8king/

Abilities: Each individual student will be expected to have contributed fully in the team's activities, and will be expected to be able to:

     Justify the hardware and software design of their team's finished robot.

     Use project management tools to organise their activities.

     Produce, test, and evaluate a working system.

     Deliver appropriate documentation of a professional standard.

Assessment: 100% Course Work, based on the documentation produced at each stage of the process, a presentation and demonstration of the final product, the effectiveness of the team's management of the project, and the understanding and contribution of each individual.

Recommended texts: Will be given by the lecturers.