Objectives:

The goal of the course "Artificial Neural Networks in Science and Medicine" is to introduce neural networks computing to students and researchers from different branches. Basic theory and mathematical background as well as strategy of use and individual phases: training, verification and prediction will be given but the main aim is to learn the basic practice of ANN by analyzing real life data from different fields (Learning-based problems). Therefore, the lectures are combined with practical computing laboratory sessions (computer room) to gain basic practical experience of ANNs use. Real life applications are related to chemistry, physics, biology, archeology, medicine and forensic sciences but the general ANNs applicability is stressed. The course gives also the opportunity to the participants to solve their own data and/or problems.

The course is articulated in three parts:
- theoretical module.
- overview of ANN application in science and technology.
- computer exercise case studies (with a final report prepared by attendants).

For further information, please have a look to the PROGRAMME.

Number of ECTS: 3

Participants: The course is addressed to bachelor students that are nearly to complete their studies (3rd, 4th academic year), master and doctorate students and graduates on experimental sciences, medicine and social sciences.

Teachers:

The course will be performed by international leading experts in ANN applications:

Prof. Josef Havel, Dpt. of Chemistry, Masaryk University (Czech Rep.).

Dr. Eladia Peña Mendez. Dto. de Química. Universidad de La Laguna.

Dr. Manuel del Valle Zafra. Dpt. de Química. Universitat Autònoma de Barcelona.

Prof. Victòria Salvadó Martín. Dpt. de Química. Universitat de Girona.

Dr. Lubomír Prokeš. CEPLANT, R&D Centre for Low-Cost Plasma and Nanotechnology Surface Modifications, Faculty of Science, Masaryk University (Czech Rep.).