

TEACHING STATEMENT



Adrian Horzyk, Ph.D., Prof.

Personal details:

Address: 30-898 Krakow, Zarosie 40, Poland

E-mail: horzyk@agh.edu.pl

Web: <http://home.agh.edu.pl/~horzyk/>

Born: 1973-04-28

Abstract. *The foundations of my teaching philosophy include active learning process supplemented with individual skill and self-learning ability development, taking into account student individual personality needs. My teaching experiences vary from laboratory instructor through a lecturer for a number of undergraduate and graduate level classes to promotion of engineer's, master's and PhD theses. My general teaching interests include artificial intelligence, computational intelligence, machine learning, knowledge engineering, data mining, artificial associative systems, chatting linguistic systems and cognitive systems. My teaching plan include offering courses in three categories: fundamental courses (for freshman and sophomore), advanced courses (for junior, senior and graduate) and research oriented courses (for graduate and PhD students). In addition, I am also interested in developing new cross-disciplinary curriculum that combines bioinformatics, neurobiology, physics, mathematics and computer science in order to deliver the latest up-to-date knowledge to students.*

TEACHING PHILOSOPHY

First of all, students should feel pleasure from discovering world, its rules, and abilities they will have after finishing university courses provided by university teachers. The main role of each professor is to give understanding of taught subjects to students and to discover new possibilities they will have when using gained knowledge, skills and expertise in these subjects. Each subject should be presented as curious as possible, not only as dry facts. It is very important to demonstrate knowledge and presented rules or algorithms on useful examples, case studies and give students ability to apply them. People usually have no courage to undertake sophisticated tasks if they do not try to do them, so it is strategic to teach students such possibilities in order to achieve their satisfaction.

A teaching process should be active and dynamic to attract students, especially to difficult topics that could be understood only with a great effort. Students should always be aware what goals will be reached, why they learn, and what they will be able to achieve thanks to the presented knowledge.

Students should be provided with various kinds of active learning, practicing, and studying practical examples of knowledge use. If possible they should be offered to take a part in scientific research to feel that they participate in important scientific projects helping our world to be a better place to live, not doing only simple examples,

which could be boring and frustrating. It should be always clear for students, where they could be able to apply skills and knowledge gained during courses.

Teaching is definitely not only a one-directional process. It should be provided as bi-directional, i.e. students should be encouraged to participate in different kinds of learning and activities (e.g. understanding a given task or solved problem, searching for solutions, designing, programming, simulation, experiments, discussion, sharing with expertise and results) as well as to regularly get feedback from students about what they think about his class, course, experiments, used methods, teaching methods etc. Good teaching leaves room for questions and discussion. Students asked for opinions, suggestions and grades feel appreciated and important. Such students like to get involved in science and application of using knowledge shared during lectures. Students should be encouraged to self-learning and reading additional materials to keep in update and extraordinary knowledge also after graduation.

Important aspect of communication and teaching is taking into account personality of individual students because various personality types are linked to various needs of students which should be satisfied in different ways. Some students can be more systematic, discovering, creative, practical, harmonic, emphatic, personal etc. A specific way of talking or arranging work groups can supply more or less personality types with satisfaction.

TEACHING EXPERIENCES

My most important teaching experience is from AGH University of Science and Technology in Krakow where I work since 2002 after my PhD graduation. My responsibility includes preparation of lecture presentations and other webpage additional materials, laboratory instructions, answering questions in office hours, helping students in project design and promotion of engineer's, master's and PhD theses. My most fundamental teaching experiences include following subjects:

- Artificial Intelligence and Machine Learning,
- Methods of Knowledge Engineering and Data Mining,
- Associative Computations in Artificial Associative Systems,
- Fundamentals of Programming, Algorithms, and Data Structures.
- Secrets of Conducting Negotiations and Personality Recognition.

TEACHING PLANS

Based on my knowledge and teaching experiences, I am interested in offering the following courses at University at three levels:

Fundamental courses (for freshman and sophomore):

- Fundamentals of Programming, Algorithms, and Data Structures,
- Fundamentals of Databases and Knowledge Representation,

Advanced courses (for junior, senior and graduate):

- Artificial Intelligence and Machine Learning,
- Methods of Knowledge Engineering and Data Mining,

Research oriented courses (for graduate and PhD students):

- Advanced Methods of Knowledge Engineering and Artificial Intelligence,
- Artificial Associative Systems and Cognitive Systems,
- Artificial Intelligent Chatting Systems and Linguistic Bots.

Through these classes, not only I will convey to students the knowledge in each specific area, but also promote my teaching philosophy and give a chance to every student to individually develop the self-learning abilities through the active learning process taking into account individual personality needs. This will be reflected in their term papers, creative ideas, novel solutions, design projects and cooperation with university after graduation or continuing study at higher level of education.

CONCLUSION

As a professor I am responsible for professional development of my students and collaborators as well as for university brand I represent in the world science, teaching practice and expertise. Each professor should attract students and collaborators with his knowledge, teaching methods communication and negotiation skills. My teaching practice showed that teacher respect grows automatically with a good will to share valuable knowledge with students and their respectful treatment as well as appreciation of their effort to understand and collaborate. This is the best way to hire gifted students for higher level of studies and even future scientific work or post-graduate collaboration with companies they will represent in the future.