PLANNING AND FORECASTING IN ENERGY SYSTEMS
(3 ECTS) *Elective*

Responsible person: Dr hab. inż. Wojciech Suwała prof. AGH
Other teachers dr inż Artur Wyrwa

Teaching hours: total 45, lectures: 15, classes: 10, project: 20
Learning outcomes
The aim of the course is to give students basic knowledge and skills in methods used in energy planning and forecasting, especially models' building.
The course is devoted to planning and forecasting methods for energy systems which are indispensable for the decisions aimed at sustainable energy development.
Course completion should give the students the following abilities:
- identification of fuels and energy systems elements and their relations,
- knowledge on the application of the methods: mathematical programming, systems dynamics,
- construction of simple models of the fuel and energy system,
- analysis of models results and policy recommendations.

Course main content:
Lectures
Aims and principles of planning and forecasting
Determinants of fuels and energy systems development
Modelling of energy systems development
Methods of modelling: mathematical modelling, systems dynamics,

Classes: recognising elements of systems, building representation of the system, programing simple models with GAMS modelling software

Project: Construction of simple model of fuel and energy system, use for forecasting and planning.

Form of credit: test
Rules of final credit: Weighted average, 50% test ,10% classes, 40% project, total 3 ECTS

Literature:
Prognozowanie gospodarcze – metody i zastosowania, Red. Cieślak M. PWN 1997
Analiza systemowa - podstawy i metodologia, Praca zbiorowa pod. red W. Findeisena, PWN Warszawa 1985
Chow C.C. *Ekonometria,* PWN, Warszawa 1995
Lesourd JB Ed. *Models for Energy Policy*, Routledge, 1996

Labys W. C., *Modeling Mineral and Energy Markets*, Kluwer Academic Publishers, Boston. 1999
Kneese A.V., Sweeney J.L. Ed. *Handbook of natural resources and energy economics*, North-Holland