PETROLEUM-GAS UNIVERSITY OF PLOIEŞTI
PhD Programme

Field of **CHEMICAL ENGINEERING**

Approved in the CSD meeting _____

Doctoral School Director
Prof. habil.PhD. Eng. Mihai Albulescu

SYLLABUS
OPTIMIZATION TECHNIQUES AND ALGORITHMS

Discipline category: **Complementary**

Number of hours for study: **168**

Number of credits allocated: 1**2**

Evaluation form: **Exam**

CONTENT

1. **Optimality. Graphic representations**
2. **Mathematical expression of an optimat problem**
3. **Admissible domains**
4. **Mathematical model of the optimization system**
5. **Objective functions – expressions of the optimization criteria**
6. **Analytical optimziation methods**
7. **Multidimensional optimization algorithms with contrains**

REFERENCES

1. Sima V., Varga A. *Practica optimizării asistate de calculator*, Editura Tehnică, Bucureşti,1986.
2. Smigelschi O., Woinaroschy A. *Optimizarea proceselor din industria chimică,* Editura Tehnică, Bucureşti, 1978.
3. Lee T.H., Adams G.E., Gaines W.M. *Computer Process Control: Modeling and Optimization*, Jhon Wiley & Sons, New York, 1968.
4. Şerban R., Dumitrescu T. *Metode de optimizare,* Editura MatrixRom, Bucureşti, 1998.
5. Kunzi H. P., Tzschach H. G. *Numerical Methods of Mathematical Optimization*, Academic Press, New York, 1971.
6. Pătrăşcioiu C. *Tehnici numerice de optimizare*, Editura MatrixRom, Bucuresti, 2005.
7. Bohîlţea, I., Cursaru, D., Elemente de modelare şi optimizare a proceselor chimice, Ed. MatrixRom, Bucureşti, 2009.
8. Curievici, I-. Optimizări în industria chimică, Ed.Didactică şi Pedagogică, Bucureşti, 1980

Discipline coordinator,	**Responsible for the PhD field,**
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