

Field of **CHEMICAL ENGINEERING**

Approved in the CSD meeting \_\_\_\_\_

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

**SYLLABUS**  
*INSTRUMENTAL ANALYSIS*

Discipline category: **Complementary**

Number of hours for study: **168**

Number of credits allocated: **12**

Evaluation form: **Exam**

**CONTENT**

- 1. Mass spectrometry**
- 2. Nuclear magnetic resonance**
- 3. Infrared spectrometry**
- 4. UV-VIS absorption spectrometers**
- 5. Gas chromatography**
- 6. High Performance Liquid Chromatography (HPLC)**
- 7. X-ray diffraction**
- 8. Electron microscopy**

**REFERENCES**

1. Dumitrescu V., Instrumental Analysis, Univeristy of Ploiești Publishing House, 2000.
2. Silverstein R. M., Webster F. X., Kiemle D. J., Spectrometric Identification of Organic Compounds, Seventh Edition, John Wiley & Sons, Inc., 2005.

**Discipline coordinator,**

Prof. PhD. Eng. Dragoș Ciuparu

**Responsible for the PhD field,**

Prof. habil. PhD. Eng. Diana Cursaru