

## **SYLLABUS TOXICITY AND IMPACT ON ENVIRONMENTAL FACTORS**

Discipline category: **Complementary**

Number of hours for study: **168**

Number of credits allocated: **12**

Evaluation form: **Exam**

### **CONTENT**

1. Categories of ecotoxic chemical compounds
2. The action of toxic substances on organisms, factors. Methods for in-situ determination and estimation of toxicity: biotests, biomarkers. Correlation with the structure of chemical pollutants
3. Toxic chemicals at work; pollutants in ecosystems; effects on populations. Evolution of pollutants in the environment (transport, chemical grading processes).
4. Instrumental techniques for the analysis of persistent organic pollutants
5. Toxicity of petroleum products. Factors influencing the toxicity of effluents from the oil industry
6. The impact of the use of drilling fluids on the marine environment
7. The impact of activities in the oil industry that use toxic substances on environmental factors
8. Formulation and use of chemicals with minimal acute toxicity.

### **REFERENCES**

1. D. J. HOFFMAN, B. A. RATTNER ET AL., EDS. *Handbook of ecotoxicology*, 2nd ed., Lewis-CRC, Boca Raton, 2002.
2. F. RAMADE, *Dictionnaire encyclopédique des sciences de la nature et de la biodiversité*, Dunod, Paris, 2008.
3. WHALE, G., et al., *Predicting refinery effluent toxicity on the basis of hydrocarbon composition determined GCxGC analysis*, CONCAWE Brussels, 2013.
4. P. E. T. Douben , *PAHs : An ecotoxicological perspective*, -Ed., Wiley, Chichester, 2003.
5. J. G. BLACK, *Microbiology. Principles and explorations*, 8th Ed., Wiley, Hoboken (, 2012.

6. DI TORO, DOMINIC M.; MCGRATH, JOY A.; Stubblefield, William A. (2007-01-01). "Predicting the toxicity of neat and weathered crude oil: Toxic potential and the toxicity of saturated mixtures". *Environmental Toxicology and Chemistry*. **26** (1): 24–36. [doi:10.1897/06174r.1](https://doi.org/10.1897/06174r.1). [ISSN 1552-8618](https://issn.org/1552-8618). [PMID 17269456](https://pubmed.ncbi.nlm.nih.gov/17269456/).

Periodical scientific journals

- *Environmental Toxicology and Chemistry*
- *Cell Biology and Toxicology*
- *Toxicological Reviews*.
- *Journal of Toxicology*.

**Discipline coordinator,**

Prof. PhD Eng. Ion Onuțu

**Responsible for the doctoral field**

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