Petroleum Technologies Laboratory IIIB

Calendar: 5th day semester

Contact Hours: PL 37,5h; OT 15,0h

Scientific Area: Processes in Chemical and Biological Engineering

Learning outcomes of the curricular unit:

This course is based on the application of the theoretical concepts lectured in the UCs of Biofuels, Biorefinery, Separation Processes II, Instrumentation and Control and Petrochemical Products Transformation in several laboratory experiments.

It is intended that in this course, students acquire the following skills:

- Plan, execute, develop and optimize experiments in the area of the several referred UCs.
- Interpret results of experiments that highlight some of the fundamental concepts of the same UCs.
-Correlate theoretical models taught with the proper applicability in the treatment of experimental results.
-Handle material /specific equipment used the experiments.
-Assess the importance of the accuracy of measurements performed.
- Develop a scientific report clearly and objectively

Syllabus:

Chapter 1 - 3.0 week(s)

Work associated with the course of Biofuels,

Chapter 2 - 3.0 week

Work associated with the course of Biorefinery,

Chapter 3 - 2.0 week(s)

Work associated with the course of Separation Processes II

Chapter 4 - 3.0 week(s)

Work associated with the course of Instrumentation and Control

Chapter 5 - 2.0 week(s)

Work associated with the course of Petrochemical Products Transformation

Evidence of the syllabus coherence with the curricular unit's intended learning outcomes:

Petroleum Technologies Laboratory IIIB is a curricular unit that aims to consolidate the theoretical and theoretical-practical knowledge acquired in the various courses lectured in the same semester

(Biofuels, Biorefinery, Separation Processes II, Instrumentation and Control and Petrochemical Products Transformation). By performing these laboratory experiments, students will gain knowledge of planning, implementation, development and optimization of experiments, in the area of the curricular units that the laboratory work supports, as well as learn to correlate the experimental work with the theoretical models taught, its correct applicability in the treatment of the experimental results. Syllabus was defined to directly follow the curricular unit's objectives.

References:

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D. M. Mousdale, Biofuels - Biotechnology, Chemistry and Sustainable Development, CRC Press, Taylor and Francis Group, 2008, ISBN-13:978-1-4200-5124-7

A. Scragg, Biofuels - Production, Application and Development, CABI, ISBN 978-1-84593-592

J. Brandrup, E.H. Immergut, E.A. Grulke, Polymer Handbook, John Wiley & Sons, 4ª Ed., 2003

M. A. Fahim, T. A. Al-Sahhaf, A. Elkila; Fundamentals of Petroleum Refining, Elsevier 2010

P. Pollak, "Fine Chemicals The Industry and Business", Willey Interscience, 2007

G. Silva, Instrumentação Industrial 2ª Edição, 2 volumes, edição ESTSetúbal, 2004.

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G. Asch, George – Les Capteurs en Instrumentation Industrielle, Dunod, 1991

J. D. Seader, E.J. Henley "Separation Processes Principles", John Wiley & Sons, New York (1998)