Code: QO627

Name: Química Orgânica Experimental II

Name in English: Organic Chemistry Laboratory II

Name in Spanish: Química Orgánica Experimental II

Subject type: Weekly

Approval Type: Grade and Frequency

Characteristic: Regular

Frequency: 75%

Period Type / Offering period: Semester / 1st Period - odd periods

Requires Final Exam: Yes

Vectors

| T | L | P | O | PE | OE | SL | WEEKS | CREDITS |
|---|---|---|---|---|---|---|---|---|
| | **4** | | **1** | | | **4** | **15** | **5** |

Occurrence on curriculum: 05

Pre requirement: *QG650 + *QO423 + *QO424

**Summary:** Qualitative analysis of organic compounds using chemical and physical methods. Organic synthesis and natural product projects.

**Program**:

1. Presentation, objectives, and characteristics of the QO627 discipline;
2. Laboratory safety;
3. Organic analysis;
4. Preliminary tests (fusion with sodium, ignition, Beilstein, solubility);
5. Specific tests (unsaturations, alcohols, halides, nitro group, aldehydes and ketones, carboxylic acids and derivatives, phenols, amines);
6. Analysis of unknown samples;
7. Organic synthesis and natural product projects:
8. 3-4 step synthesis of natural substances, pharmaceuticals, biologically active substances, or substances of interest for spectroscopic study;
9. Characterization of synthesized substances using infrared spectroscopy, hydrogen and carbon-13 nuclear magnetic resonance and mass spectrometry.

**Basic Bibliography**

1) PAVIA, D. L.; LAMPMAN, G. M.; KRIZ, G. S.; ENGEL, R. S. **A Microscale Approach to Organic Laboratory Techniques**. 5th Ed. Belmont, CA: Brooks/Cole, 2013. 1015 p
2) MOHRIG, J. R.; HAMMOND, C. N.; SCHATZ, P. F. **Techniques in Organic Laboratory**. 3rd Ed. New York: W. H. Freeman & Co., 2010. 463 p.
3) SILVERSTEIN, R. M.; WEBSTER, F. X.; KIEMLE, D. J. **Spectrometric Identification of Organic Compounds**. 7th Ed, ---, John Wiley & Sons, 2005. 502 p

**Supplementary Bibliography**

1) PAVIA, D. L.; LAMPMAN, G. M.; KRIZ, G. S.; ENGEL, R. S. **Introduction to Organic Laboratory Techniques. A Microscale Approach**. 4th Ed. Belmont CA: Brooks/Cole, 2007. 990 p
2) TIETZE, L. F.; EICHER, T.; DIEDERICHSEN, U.; SPEICHER, A. **Reactions and Syntheses in the Organic Chemistry Laboratory**. 1st Ed. Weinheim: Wiley-VCH, 2007. 582 p
3) SOLOMONS, G; FRHYLE, C. **Química Orgânica. Vol.1**. 1ª Ed. Rio de Janeiro: LTC, 2012. 613 p
4) SOLOMONS, G; FRHYLE, C. **Química Orgânica. Vol.2**. 1ª Ed. Rio de Janeiro: LTC, 2012. 616 p
5) MC MURRY, J. E. **Química Orgânica: Combo**. 1ª Ed. São Paulo: Cengage Learning, 2016. 1472 p