Code: **QI244**

Name: **Química Inorgânica Experimental**

Name in English: **Inorganic Chemistry Laboratory**

Name in Spanish: **Química Inorgánica Experimental**

Subject type: **Weekly**

Approval Type: **Grade and Attendance**

Characteristic: **Regular**

Frequency: **75%**

Period Type / Offering period: **Semesterly / All terms**

Requires Final Exam: **Yes**

Vectors

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

Occurrence on curriculum: **09, 39**

Pre requirement:

Ementa:

Fundamental concepts involved in chemical reactions: reactivity of the species involved, chemical equilibrium, stoichiometry, redox, reaction yield, chemical kinetics, and catalysis. Reactivity of metals. Preparation of transition metal complexes illustrating crystal field theory (ligand effect, coordination number, and color).

Program:

Introduction. Laboratory safety.

Study of physical and chemical properties, such as: melting, liquefaction, combustion, oxidation, decomposition, and chemical equilibrium.

Synthesis and characterization of inorganic solids and inorganic polymers, transition metal complexes and/or d-transition metal organometallics, and study of their reactivity.

Inorganic compounds with applications in: catalysis, photocatalysis, energy conversion, magnetism, sensors, electrochemistry, optics, among others.

Basic Bibliography

1) WEISS, G. S.; GRECO, T. G.; RICKARD, L. H.; **Experiments in General Chemistry**; 6 ed. Prentice Hall: New Jersey, 1993.
2) TASIĆ, L. (ORG.) **Química em 50 Ensaios** – Campinas-SP: Editora Átomo, 2017.
3) GREENWOOD, N. N.; EARNSHAW, A.; **Chemistry of the Elements**; 2 ed. Editora Pergamon, 1997.

Supplementary Bibliography

1) HOUSECROFT, C. E.; SHARPE, A. G.; **Inorganic Chemistry**. 4 ed. Upper Saddle River. NJ: PrenticeHall, 2012.
2) ATKINS, P.; JONES, L.; LAVERMAN, L. **Princípios de Química: questionando a vida moderna e o meio ambiente**, 7 ed. Eidtora Bookman, 2018.
3) KOTZ, J. C.; PURCELL, K. F. **Chemistry and Chemical Reactivity**, 2 ed. Editora Ed. Saunders College, 1991.
4) NOGUEIRA, R. F. P.; JARDIM, W. F. **Photodegradation of Methylene Blue. Journal of Chemical Education**, vol. 70, n .10, p. 861-862, 1993.
5) GUSHIKEM, Y. **Espectros Eletrônicos de alguns Complexos de Geometria Octaédrica de Ni2+: uma Introdução Prática à Teoria do Campo Cristalino no Curso de Graduação**, Química Nova, vol. 28, n. 1, p. 153-156, 2005