Code: **QO653**								
Name: **Bioquímica II**								
Name in English: **Biochemistry II**								
Name in Spanish: **Bioquímica II**								
Subject type: **Weekly**								
Approval Type: **Mark > 5.0, and frequency > 75%**								
Characteristic: **Regular**								
Frequency: **75%**								
Period Type / Offering period: **First semester of the year/ Impar semesters**								
Requires Final Exam: **Yes, when applicable.**								
Vectors								
T	L	P	O	PE	OE	SL	WEEKS	CREDITS
4	**-**	**-**	**-**	**-**	**-**	**4**	**15**	**4**
Occurrence on curriculum: S								
Pre-requirement: ***QO521 + QO551, Organic Chemistry II and Biochemistry I**								

Summary: Metabolism, catabolism, and anabolism. Introduction to metabolism, glucose catabolism, signal transduction, glycogen metabolism, citric acid cycle, gluconeogenesis, pentoses phosphate pathway, electron transport and oxidative phosphorylation, photosynthesis, lipid metabolism, amino acid metabolism, nucleotide metabolism, integration and regulation of metabolism, introduction to expression and transmission of genetic information, protein folding, introduction to protein engineering.

Program:

- Introduction to metabolism,
- Glucose catabolism,
- Signal transduction,
- Glycogen metabolism,
- Citric acid cycle,
- Gluconeogenesis,
- Pentoses phosphate pathway,
- Electron transport and oxidative phosphorylation,
- Photosynthesis,
- Lipid metabolism,
- Amino acid metabolism,
- Nucleotide metabolism,
- Integration and regulation of metabolism,
- Introduction to the expression and transmission of genetic information,
- Protein folding, and
- Introduction to protein engineering.

Basic Bibliography

1) NELSON, D. L.; COX, M. M. **Princípios de Bioquímica de Lehninger**. 8. Ed. Artmed, 2022.
2) MORAN, L. A.; HORTON, H. R.; SCRIMGEOUR, K. G.; PERRY, M. D. **Bioquímica**. 1. Ed. Pearson Universidades, 2013.
3) VOET, D.; VOET, J.; PRATT, C. **Bioquímica**, 4. Ed. Artmed, 2013.

Supplementary Bibliography

1) WATSON, J. D.; BAKER, T. A.; BELL, S. P.; GANN, A.; LEVINE, M.; LOSICK, R. **Biologia molecular do gente**. 7. ED. Artmed, 2015.
2) MURRAY, R. A.; BENDER, D. A.; BOTHAM, K. M.; KENNELLY, P. J.; RODWELL, V. W.; WEIL, P. A. **Bioquímica ilustrada de Harper**. 29. ED. Artmed, 2014.
3) BERG, J.; TYMOCZKO, J.; STRYER, L.; **Biochemistry**, 8. Ed. W. H. Freeman, 2015.

4) TASIC, L. **Ácidos nucleicos.** In: TASIC, L. **Química em 50 ensaios**. CAMPINAS: Átomo, 2017. CAP. 46, P. 366-374.
5) 5WANG, J. Y.; PAUSCH, P.; DOUDNA, J. A. **Structural biology of CRISPR–CAS immunity and genome editing enzymes. Nature reviews in microbiology** (2022). HTTPS://DOI.ORG/10.1038/S41579-022-00739-4