

212019 – ADVANCED ORGANIC CHEMISTRY I

CREDITS: 04 (four) – 60 hours/class

CONTENT:

Chemical bond and structure. Stereochemistry. Conformational analysis, stereo and stereo-electronic effects. Mechanisms of organic reactions: studies of kinetic and thermodynamic data, isotopic effect, use of acidity and basicity information, solvent effect and reaction intermediates. Nucleophilic substitution, addition and elimination reactions. Pericyclic reactions. Rearrangements.

SYLLABUS:

1. Chemical bonding and structure.
2. Stereochemistry.
3. Conformational analysis, stereo and stereo-electronic effects.
4. Mechanisms of organic reactions: studies of kinetic and thermodynamic data, isotopic effect, use of acidity and basicity information, solvent effect and reaction intermediates.
5. Nucleophilic substitution reactions, addition and elimination.
6. Pericyclic reactions.
7. Rearrangements.

BIBLIOGRAPHY:

1. CAREY, F.A.; SUNDBERG, R.J. Advanced Organic Chemistry, Plenum Press, USA, 1996.
2. MARCH, J. Advanced Organic Chemistry: reactions, mechanisms and structure. 2.ed., McGraw-Hill, USA, 1992.
3. SOLOMONS, T.W.G. Química Orgânica, Vol. 1, 2. 7.ed. LTC, Brasil, 2001.
4. HENDRICKSON, J.B.; CRAM, D.J.; HAMMOND, G.S. Organic Chemistry. 3.ed. McGraw-Hill Kogakusha.