ORGANIC CHEMISTRY (BS-ADP 7th Semester)

Module Code:	**Chem-417**
Module title:	**Oxidation & Reduction**
Name of Scheme:	**BS-ADP 7th Semester**
Department:	**School of Chemistry**
Faculty:	**Science**
Module Type:	**Compulsory**
Module Rating:	**2 credits**

OBJECTIVES:

To achieve knowledge about the mechanisms and principles operative in different types of methods for oxidation and reduction of organic compounds.

SYLLABUS OUTLINES:

1. Oxidation Reactions

Introduction, oxidation of saturated hydrocarbons, olefinic double bonds, aromatic rings, systems containing oxygen such as phenols, alcohols, aldehydes, ketones, and dicarbonyl compounds, oxidative decarboxylation, of acids, oxidation of systems containing nitrogen such as amines, hydrazines and hydrazones.

2. Reduction Reactions

Introduction, reduction of cycloalkanes, alkenes, alkynes, and aromatic rings, hydrogenolysis, reduction of benzylic and allylic systems, aldehydes and ketones, alcohols, pinacols, epoxides, acids and their derivatives, Reduction of system containing nitrogen such as imines, oximes and nitro compounds.

RECOMMENDED BOOKS:

1. Organic Chemistry, Vol. I (6th Ed.) and II (5th Ed.) by I.L. Finar, Pearson Education (Singapore) Pvt. Ltd. 2008.
2. March's Advance Organic Chemistry: Reactions, Mechanisms and Structures. (6th Ed.) by M.B. Smith and J. March, Wiley, 2007.
3. Organic Chemistry, (5th Ed.) by S.H. Pine, McGraw Hill, New York, USA, 1987.
4. Organic Chemistry, (6th Ed.) by Francis A. Carey, McGraw Hill, USA, 2005.
5. Organic Chemistry, (6th Ed.) by R.T. Morrison, R.N. Boyd and r.K. Boyd, Benjamin Cummings, 1992.
6. Modern Synthetic Reactions, (2nd Ed.) by H.O. House, W.A. Banjamin Inc., Menlo Park, CA.
7. Principals in Organic Synthesis, by R.O.C. Norman and M.J. Coxon, Chapman and Hall, 1993.
8. Heterocyclic Chemistry, (4th Ed.), by J.A. Joules, K. Mills, Blackwell Publishing, 2000.
9. Heterocyclic Chemistry, (3rd Ed.), by T.L. Gilchrist, Longman, 1997.
10. Organic Chemistry, by Jonathan Clayden, Nick Greeves and Stuart Warren, Oxford University Press, 2000.