[A-3]COURSE SYLLABUS

1. Course Description (Approximately 100 words)

This course is designed to provide a fundamental overview of organic chemistry to students interested in pursuing a career in the sciences. Upon successful completion of this class, students will understand the relationship between structure and function of molecules, the major classes of reactions, reaction energetics and mechanisms, synthesis of organic compounds, and how to determine structure via various spectroscopic techniques. Several themes are prevalent in each unit of study: nomenclature, chemical and physical properties, structures, mechanisms, common molecules, and the diversity of organic molecules in plants, bacteria, and animals.

2. Course Goals and Objectives (Approximately 100 words)

Upon completion of this class, students will be able to predict bonding and three-dimensional structure, including chirality of organic compounds. Students will be able to predict the reactivity of specific functional groups, and construct efficient, simple mechanistic pathways for the synthesis of a given compound.

3. Textbook (Title, Author, Publisher, Year of Publication, etc.)

J. Clayden, N. Greeves, S. Warren, Organic Chemistry, 2nd edition, Oxford Unviersity Press, New Delhi, 2012.

4. Reference

R. T. Morrison, R. N. Boyd, Organic Chemistry, 6th edition, Prentice-Hall, New Delhi,1992.

P. Y. Bruice, K. J. R. Prasad, Essential Organic Chemistry, 1st edition, Pearson Education, New Delhi, 2008.

5. Course Requirements and Grades

CAT 30%
EXAM 70%

6. Course Calendar

Week	Main Content
1	Electronic Structure and Bonding: Distribution of electorns in an atom, ionic
2	Electronic Structure and Bonding:atomic orbitals and bond formation
3	Acids and Bases:Introduction, acid-base reactions, pKa and pH, buffer soluti
4	Alkanes and Alkyl Halides: Nomenclature
5	Alkanes and Alkyl Halides:physical properties
6	Alkanes and Alkyl Halides:conformation analysis and reactions
7	MID-TERM EXAM
8	Alkenes and Alkynes: Nomenclature
9	Alkenes and Alkynes:physical properties
10	Alkenes and Alkynes:conformation analysis and reactions
11	Alcohols, Amines, Ethers and Epoxides: Nomenclature
12	Alcohols, Amines, Ethers and Epoxides:physical properties and reactions
13	Carbonyl Compounds: Nomenclature,physical properties and reactions.
14	FINAL EXAMINATION