



# INTRODUCTORY ORGANIC CHEMISTRY II

**PROF. HARINATH CHAKRAPANI**

Department of Chemistry  
IISER Pune

**PROF. NEERAJA DASHAPUTRE**

Department of Chemistry  
IISER Pune

**PRE-REQUISITES :** Introductory Organic Chemistry I is a pre-requisite. This course has content for several competitive exams as well.

**INTENDED AUDIENCE :** Second and third year B.Sc. students; first year M.Sc. students

**COURSE OUTLINE :**

This course focuses on organic chemistry, the chemistry of carbon and carbon compounds. Stemming from the Introductory Organic Chemistry I, this course builds important concepts in chemistry of organic compounds and their reactions. This course will cover important functional groups such as carboxylic acid and derivatives, carbonyl compounds, enols and enolates etc. Other important topics include rearrangement reactions, conjugate additions and stereochemistry of addition reactions. In short, welcome to a course explaining the molecular basis of chemistry around you.

**ABOUT INSTRUCTOR :**

Prof. Harinath Chakrapani completed his undergraduate and post-graduate studies in Chemistry from Loyola College and Indian Institute of Technology Madras, respectively. He moved to Duke University, USA to pursue his doctoral studies and after post-doctoral research stints at Wake Forest University and the National Cancer Institute, USA, he joined IISER Pune in July 2009 and is currently Associate Professor. His research interests are in organic chemistry and chemical biology. His laboratory works on developing new tools to study effects of oxidative stress responses in cells and antibiotic resistance. He has over eight years of teaching experience at IISER Pune

Prof. Neeraja Dashaputre completed her undergraduate studies in chemical technology from Institute of Chemical Technology, Mumbai. After which, she obtained a doctoral degree in organic chemistry at University of Maryland, USA. She worked as a faculty at Claremont University post her doctoral studies. She joined IISER Pune in July 2016 and is currently Assistant Professor. Her research interests are in pedagogy development for teaching chemistry. She has over five years of teaching experience in India, and USA.

**COURSE PLAN :**

**Week 1:** Alcohols, Phenols, Ethers and Epoxides; Carboxylic Acids and their Derivatives

**Week 2:** Electrophilic Aromatic Substitution

**Week 3:** Stereochemistry and Addition to double bonds

**Week 4:** Carbonyl Chemistry and Addition to Carbonyl groups

**Week 5:** Enols and Enolates: Aldol and related reactions

**Week 6:** Enols and Enolates: Aldol and related reactions

**Week 7:** Conjugate Additions; Acylation of Enol/enolates

**Week 8:** Rearrangements