

Title	Asymmetric Synthesis		
Credits	2.5		
Semester	2		
Level	4		
Coordinator	Professor Pat Guiry		
Indicative Module Descriptor:			
<p>The module aims to give students an advanced course on an area of synthetic organic chemistry of current importance, namely asymmetric synthesis. The key learning objectives of this module are:</p> <p>a) To understand the need for asymmetric synthesis and a comparison of the currently used approaches,</p> <p>(b) To be able to apply selected chiral reagents, chiral auxiliaries and chiral catalysts in the asymmetric synthesis of organic compounds,</p> <p>(c) To understand the three-dimensional transition states in each of the above approaches and thus understand why a particular stereoisomer is formed.</p> <p>(d) To be able to apply this methodology as key steps in the total synthesis of molecules of biological interest.</p> <p>The type of asymmetric transformations which will be discussed include C-H, C-C and C-O bond formations. The application of transition metal complexes and organocatalysis to these transformations will be a particular emphasis.</p>			
Indicative Learning Outcomes			
<p>On successful completion of this module, students should:</p> <ul style="list-style-type: none"> • Have a knowledge and understanding of modern approaches to asymmetric synthesis; • Be familiar with applications of transition metal complexes and the importance of recent advances in chiral ligands; • Be familiar with recent advances in the development and use of organocatalysts for asymmetric synthesis; • Be able to apply these chirotechnologies as key steps in the preparation of biologically important molecules. 			
Workload:	50		
Class Contact: Lectures	12		
Specified Assignments	18		
Autonomous Student learning	20		
Assessment	type	%	timing
Assignments		100	End Yr 1
<ol style="list-style-type: none"> 1. Students will carry out a series of problem sets related to lecture material on transition metal catalysis (12 h) 2. Students will carry out a series of problem sets related to lecture material on organocatalysis (6 h) <p>Students will either pass or fail the module on basis of satisfactory or unsatisfactory completion of the assigned tasks.</p>			