

Title	Total Synthesis of Complex Molecules		
Credits	2.5		
Semester	2		
Level	4		
Coordinator	Paul Evans		
Indicative Module Descriptor:			
<p>The student following this course will develop an understanding and appreciation of the construction of complex molecules using a variety of chemical methods. They will also be exposed to the different structural types and classes of natural products and in addition the link will be made between natural products and pharmaceuticals based on their scaffolds. The course will look in turn at different examples and step-by-step investigate how these compounds may be effectively constructed. During this process the central concepts investigators routinely apply to solve these problems will be illustrated. An emphasis will be placed on problem-based learning and the student will be asked to solve and propose solutions for syntheses and synthetic problems during the class. Ultimately they will also approach this overall process themselves in an assignment in which they will propose and design the synthesis of a target molecule that they will finally present to the class. The module is directed towards postgraduate students either following synthetic organic chemistry based research programmes, or with a firm interest in this area.</p>			
Indicative Learning Outcomes			
<p>On completion of this module students should be able to:</p> <ul style="list-style-type: none"> • approach the preparation of a complex molecule, possessing multiple functional groups, rationally using the concept of retrosynthetic analysis; • transfer this rough idea into a feasible forward synthesis taking into account appropriate protecting groups, including the understanding for their selective introduction and removal (orthogonality); • suggest ways in which to achieve selectivity in the sequence – chemo-, regio- and stereoselectivity. 			
Workload:	55		
Class Contact: Lectures	12		
Tutorials	4		
Specified Assignments	15		
Autonomous Student learning	24		
Assessment	coursework	100%	timing
Assignments			End Yr 1
<ul style="list-style-type: none"> • Task 1 Literature assignment – involving the researching and proposed solution to a set literature problem (carries 50% of total marks, 7.5 h) • Task 2 Retrosynthetic problem – involving the research and presentation of an approach to the preparation of a target molecule (carries 50% of total marks, 7.5 h) <p>Students will receive a grade for this module and the level required to pass will be 60%</p>			