

<b>Title</b>	Spectroscopic techniques		
<b>Credits</b>	2.5		
<b>Module Places</b>			
<b>Elective Places</b>			
<b>Semester</b>	1		
<b>Level</b>	4		
<b>Coordinator</b>	Susan Quinn		
<b>Indicative Module Descriptor:</b>			
<p>The module aims to give students the opportunity to develop a theoretical, analytical and practical approach to the use of spectroscopic techniques. It includes content related to: the physical principles underlying the techniques, instrument operational parameters and application to various chemical and biological systems. The techniques covered include Infrared (IR), near infrared (NIR), Raman, UV-visible, Circular Dichroism and Emission spectroscopy. These techniques will be taught from the perspective of theory, spectral output and compound analysis. The scope of the course will include sample type, preparation, spectrometer parameters and nature of the spectral experiment, and analyses of the spectral output. Students are exposed to each technique in a systematic and in-depth way. The emphasis is on the application of spectroscopy in the laboratory.</p>			
<b>Indicative Learning Outcomes</b>			
On successful completion of this module, students should:			
<ul style="list-style-type: none"> <li>• Have a knowledge and understanding of the theoretical principles underpinning general spectroscopic techniques used routinely in Industry;</li> <li>• Be familiar operational constraints of each technique;</li> <li>• Be aware of sampling procedures</li> <li>• Be able to analyse and interpret data and have an appreciation of the limitations of the each spectroscopic technique</li> <li>• Be capable of designing a method combining different techniques</li> <li>• Be able to identify the most suitable spectroscopic techniques for the analysis of a given sample.</li> </ul>			
<b>Workload:</b>	50		
Class Contact: Lectures	10		
Class Contact: Student presentations related to spectroscopy	4		
Specified Assignments	20		
Autonomous Student learning	16		
<b>Assessment</b>	type	% of marks	timing
Assignments		100	
<ol style="list-style-type: none"> <li>1. Students will prepare a presentation related to application of the spectroscopic techniques (6 h)</li> <li>2. Students will carry out a series of problem sets related to lecture material (14 h)</li> </ol>			