



# Development of chemistry skills in level 1 forensic science students

Dublin- 28-29 August 2008

Variety in Chemistry Education 2008



**PROJECT FUNDED BY THE CENTRE  
FOR EDUCATIONAL RESEARCH AND  
DEVELOPMENT (CERD)**

**UNIVERSITY OF LINCOLN, UK**

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# PROBLEM!

Students do not understand concepts  
in introductory Chemistry  
(Forensic Science first year unit).



But... How important is Chemistry  
in the degree? Would they cope  
3 years without it?

# Variety in Chemistry Education 2008



## Programme structure for the BSc (Hons) Forensic Science

Level 1	Introductory Biology (30 points)	<b>INTRODUCTORY CHEMISTRY (30 CATS)</b>	Quantitative Methods in Science (30 points)	Crime Scene Investigation (30 points)
	Level 2	Forensic Molecular Biology (30 points)	<b>ANALYTICAL TECHNIQUES (30 CATS)</b>	Anatomy, Physiology and Post-mortem Processes (15 points)
<b>DRUGS OF ABUSE (15 CATS)</b>				
Level 3	Forensic Entomology (15 points)	Forensic Anthropology (15 points)		<b>INDEPENDENT STUDY (30 CATS)</b>
	<b>APPLIED FORENSIC ANALYSIS (30 CATS)</b>			
	<b>FORENSIC TOXICOLOGY (15 CATS)</b>			
	<b>FIRE &amp; EXPLOSION INVESTIGATION (15 CATS)</b>			

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# How do students react?

They go to their peers and those who understood the message explain it to those who didn't



# How can we help ?

Make student explain chemistry to other students using a series of video clips !!

Functional groups video  
[FunctionalGrps.mov](#)

Make off functional groups  
[make off functional groups.avi](#)

## Questionnaire

Chemistry is a fundamental aspect of forensic science. The Introductory Chemistry unit is designed to provide all level 1 students with the basic chemistry skills needed to build on later in the course.

Please indicate how easy the following areas were for you to understand by marking the appropriate box on the answer sheet provided.

Many thanks

A = very easy    B = easy    C = OK    D = hard    E = very hard

How did we know what they consider more difficult?

### Orbitals

1. Relationship between Principle Quantum Number and Energy
2. Principles of Bonding and Antibonding
3. Principles of Paramagnetic and diamagnetic molecules
4. Molecular Orbital Diagrams
5. Identifying Functional Groups

### Kinetics

6. Principles of zero, 1st and 2nd order reactions
7. Calculating Half-Life



How will we know that students find the videos useful and they help them to understand chemistry?

*Survey and unit results*



So... no excuses!!  
LET'S DO SOMETHING ABOUT IT

THANKS!!!!