

Title of Module ~ Mrs Kelly

Forensic Science & Biology (4A1, 4A2, 4A3)

1 class per week for the year

Last updated: 26/8/14

Rationale

Forensic Science encompasses a wide range of disciplines and so this module will compliment the overall aims of the transition year programme very well. There is great scope for:

- Creating cross-curricular links
- Project work
- Group work and cooperative exercises
- Independent research
- Creating Links to the world of work

This module provides a unique opportunity to promote the science subjects for Leaving Certificate given the positive image that forensic science has in the public eye.

Agricultural Science is a subject on the Leaving Cert course.

General Aims:

- To help the student to recognise the important role that science plays in society and so create a more positive image for science subjects
- To encourage the student to take up a career in science by doing science subjects for the leaving certificate and third level.
- To promote autonomy and self directed learning in the student
- To embrace the concept of discovery learning
- To foster self discipline
- To develop interpersonal skills of the student

- To give the student an idea of what is covered on the LC Ag Science course

- To do some work on Genetics

Desired Learning Outcomes

On completion of this module the student should be able to:

- Define in their own words the terms; Forensic, Archaeology, Pathology, Odontology, Entomology, Anthropology, Ecology, Psychology, Geology, Substrate, matrix, development media, solvent, stationary phase, mobile phase, Retention Factor, Affinity, Dye, Pigment, Toner,
- Describe in their own words the relationship between Science and the law
- Describe the role of the expert witness
- Summarise the history and development of Forensic Science to date
- Recognise the five main print patterns; Whorl, Left Loops & Right Loops, Arch, Tented Arch
- Identify minutiae fingerprint characteristics e.g. ridge endings
- Write down the procedure for examination of a latent fingerprint
- Outline the main criteria for Crime Scene Investigation

Teaching and Learning Strategies

St. Gerald's College online learning suite Moodle will be used to co-ordinate this module. It will help engage the student in individual research tasks and will allow them to collaborate with each other more easily. Moodle will also allow the teacher to manage more effectively all aspects of the module.

Formal input by teacher

Practical Laboratory Work

Videos and flash animations

Individual and Group Research

Project Work

Oral presentation using PowerPoint

Cooperative learning strategies

- Jigsawing
- Think pair & share

Content

- History of Forensic Science
- Branches of Forensic Science
- Careers in Forensic Science
- Questioned Document Examination
- Toxicology
- Striation analysis
- Fingerprint analysis
 - Henry Classification System
 - Print Types (Latent, Patent & Plastic)
 - Automatic Fingerprint Identification Systems (Live scan)
 - Info from Fingerprints
 - Examination of Latent prints
- Crime Scene Investigation
 - Criteria for CSI
- DNA Profiling
- Forensics Anthropology
- Introduction to Agricultural Science LC subject.
- Genetics

Assignments

- 10 characteristics on 10 fingerprints given
- Own 10 fingerprints inked and 10 characteristics on each
- Working out your own FBI classification
- Identifying an unknown fingerprint from glassware
- Sheet with bone lengths – to calculate heights
- Identification of person from bones found – worksheets
- Questions on Genetics

Contribution to Moodle online course

- Engagement in forum discussions
- Use of resources
- Online Homework & Assignments
- Individual Research Tasks

Written Assessment

Knowledge

Critical engagement with content

Understanding

Real life examples / applications

Communication of ideas

Class Discussions

Participation

Attitude

Etiquette

Articulation

Resources & Materials

Broadband Internet Access

Laptop, Data projector, Speakers, Camcorder

Software: Microsoft; PowerPoint, Excel, Word, Media Player, video editor.

UV Lamp, TLC plates, Latent Finger print kit,

Links with other subjects

Biology

- DNA profiling (structure and function of genes etc)
- Odontology – Human anatomy (Teeth)
- Anthropology – Human anatomy (Skeleton structure, bone composition etc)

Outside Speakers

Forensic Scientist from the Garda Forensic Laboratory (To be confirmed)

Outside Trips/Activities

Visit to Garda Forensic Lab in Garda Headquarters, Phoenix Park, Dublin. (TBC)

Evaluation

There are many tools that can help determine how successful this module has been and how well the learning targets have been met. To find out what worked and what didn't work and to what extent, the various parties involved need to provide feedback. Students, Parents, Teachers, Tutors, Co-ordinators and Employers.

Student Feedback from portfolios

- Self Assessment Sheets
- Log Books of transition year learning
- Subject evaluation sheets
- Results of activity assessments

Module Teacher's self evaluation of individual subjects and modules

Parental feedback at parent teacher meetings

Co-ordinator feedback