

Forensic Science (Phys 341), MWF

UNIQUE #56270

RLM 7.104

Time: 11:00 - 12:00

Due to ever increasing refinement in the analysis of materials and nearly unlimited computing power, “the defenders” can reconstruct without the help of witnesses or confessions, with very high certainty, events which occurred in the past. The tools of forensic science are involved in every major legal case, dissected in many details and often simplified for the jurors. They and the general public can be overwhelmed by this scientific onslaught if they have not been properly educated (by the educational system or by themselves). The aim of this course is to demonstrate what you can do today as a participant, to recognize the pitfalls and interferences, and how large are the unavoidable uncertainties.

During the first part of this course I will focus on procedures and techniques based on physics but also explore the neighboring disciplines such as chemistry and biology as well. I will use real episodes to show how scientists are reconstructing crime scene such as car accidents, fires, shootings, or drug usage. I will also show how we can protect ourselves by the interception of drugs on the border and the detection of explosives and contrabands in airports or harbors and drunken driving.

In the second part of the course I will use historical well documented cases to show the power of analytical methods. Here I am focusing on paintings (Vermeer), ceramics (pottery from the Ramses period), and fossils (the Similaun man, Ozi) as well as the Lindbergh baby.

Please, remember, the topic is physics and the forensic cases will be the medium through which I will familiarize you with our approach to comprehend natural phenomena and use our knowledge. The ultimate goal is that *you* will later use the underlying principles to be a more creative and constructive member of society. I expect some high school physics background, and there will be some hands-on homework. The dreaded 3 tests (from which we will count two) and the final, together with your homework will determine your final grade. My motto is, everybody who tries hard will succeed and gets an excellent grade.