Part 2 - Dr. Evans (October 21 December 2)

1. Review of protein and peptide structure (1.5 hours)

   Secondary structures as a structural biologist looks at them. STRUCTURE = FUNCTION, peptide bonds & Ramachandran plots, complementarity and the -helix: 4-helix bundle, globin fold, -sheets, -bulges, -turns, antibody fold, Rossmann fold, jellyroll, TIM barrels, etc.

2. Structure determination by protein crystallography (9 hours)

   Crystal symmetry: What are crystals? Why use crystals?
   X- law.
   Crystal quality & data resolution.
   What information can be obtained from each determination?
   The phase problem: Heavy atoms, MAD & molecular replacement.
   Electron density maps.
   Data collection & structure fitting.
   Refinement of protein structures & indicators of

3. Structure determination by NMR (1.5 hours)

   Larmour frequency & proton coupling.

Assessment of Student Performance

(1) **course**:

students taking a deferred examination are considered to be in violation of the University of Victoria policy on academic integrity (see current University Calendar). Deferral of a final exam must be requested with an Academic Concession form and submitted directly to Undergraduate Records. Deferred final exams for fall term courses will be arranged by the instructor. Deferred final exams for spring term courses will be arranged through Undergraduate Records and must be written before the end of the summer term as stipulated in the University Calendar.