

KI Doctoral Course 2430: Principles of Nucleic Acid Structure

Coordinator: Alessandra Villa (alessandra.villa@ki.se)

Time Schedule

Mo. 23 January 2012; 9-12 Course introduction, nomenclature, DNA and RNA building blocks. Structural and conformational features of nucleotides. Hydrogen bonding and base stacking.

Wed. 25 January 2012; 9-12 Introduction to methods to determine structures and dynamics of DNA and RNA systems (such as x-ray crystallography, NMR, theoretical approaches and so on)

Thu. 26 January 2012; 9-12 DNA and RNA helical structure. Tutorial on structure visualization

Mo. 30 January 2012; 9-12 Nucleic acid and ion/water interactions; small molecule-DNA interactions

Wed. 1 February 2012; 9-12 RNA mismatches. High order RNA structure.

Thu. 2 February 2012; 13-16 Secondary structure predictions, geometrical description, tutorial on 3DNA.
Dr Mauricio Esguerra (Bionut, KI)

Mo. 6 February 2012; 9-12 External speaker: Prof Maria Selmar (Uppsala University, Sweden)

Wed. 8 February 2012; 9-12 DNA mismatches, High order DNA structure, DNA methylation.
Prof. Lennart Nilsson (Bionut, KI)

Thu. 9 February 2012; 9-12 First draft portfolio and discussion

Mo. 13 February 2012; 9-12 External speaker: Prof David Lilley (University of Dundee, UK)

Wed. 15 February 2012; 9-12 DNA protein recognitions.
Prof. Lennart Nilsson (Bionut, KI)

Thu. 16 February 2012; 9-12 Participants seminars

Mo. 20 February 2012; 9-12 External speaker: Prof Frédéric Allain (ETH Zürich, Switzerland)

Thu. 23 February 2012; 9-12 Final exam and Portfolio submission.