Dates for the Bioanalytic-lecture, Martina Pohl, WS 2012/2013

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Date/Place	Content
9.11.2012 (9-12.30 h) ICS-4 seminar room (building 15.1; R249)	**Part I:** **Short introduction to protein structure:** protein stability; proteins in water; proteins in non-water systems. **Determination of protein concentration:** colorimetric methods, UV, IR, amino acid analysis; **Proteins in water:** impact of buffer, pH,; definition of pH, pKa; influences on pH (T, ionic strength); choice of buffer; impact of salts on proteins, ionic strength, Hofmeister series; **Correct handling of pH-electrodes**, measuring pH,
16.11.2012 (9-12.30 h) IBG-1 library (building 15.4, R 302)	**Part II:** **Enzyme activity & kinetic parameters;** principles of enzyme assays (continuous, discontinuous); inhibition; cooperativity, allosteric effects ; data plots and errors; **definition of enzyme specific parameters** (unit, katal, specific and molar activity, kcat), active site titration
23.11.2012 (12.30-16.00 h) ICS-4 seminar room (building 15.1; R249)	**Part III:** **activity and stability optima**, pH-optima, T-optima, determination of k_{des} and $t_{1/2}$, thermal transition temperature, activation energy; **Photometry** (UV, Vis), absorbance and sensitivity, assay development, coupled assays (trouble shooting),
30.11.2012 (9-12.30 h) ICS-4 seminar room (building 15.1; R249)	**Part IV:** Assays with artificial chromogenic compounds; Fluorescence spectroscopy and fluorimetric assays; HPLC-based assays, NAD(P)H-based assays;
7.12.2012 (9-12.30 h) IBG-1 library (building 15.4, R 302)	**Part V:** Nomenclature, separation and analysis of chiral compounds; enantiomeric excess (ee) and enantiomeric ratio (E);
14.12.2012 (9-12.30 h) 21.12.2012 (9-12.30 h) IBG-1 library (building 15.4, R 302)	**Part VI, VII:** **Protein structure determination:** NMR, X-ray, SAXS, CD, Fluorescence, FRET, static and dynamic light scattering