**Jing Zhang, Biochemistry Lab Fall 2016, UNL**

**BIOC 433/833, composed of a 50-min Lecture and a 3.5 h lab each week**

mCURE-see highlighted areas of schedule

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| Week | Lecture | Lab Activity | Assignments Due |
| 1 | Course Overview  pH meter, Buffers, and Titration curves | Check in & Lab Safety  Expt.1 Micropipette Calibration and Buffer Titration curves |  |
| 2 | Spectrophotometry | Expt.2 pH indicators and  Spectrophotometry | Report 1 |
| 3 | Plasmid DNA, Restriction analysis, and PCR | Expt.3 Plasmid DNA, Agarose gel electrophoresis, and PCR (Cloning I) | Report 2 |
| 4 | Protein assays and Enzyme assays | Expt.4 Part I: Restriction digestion and Transformation (Cloning II)  Part II: Measuring Protein Concentration | Report 3 |
| 5 | Protein purification  SDS-PAGE | Expt.5 Purification of -galactosidase and Enzyme Assay | Report 4 |
| 6 | Introduction of MDH project and Bioinformatics | Expt.6 SDS-PAGE and Western Blotting (Start) | Report 5 |
| 7 | MDH: Generating Hypothesis | Expt.7 Western Blotting (Finish)  Regulation of -galactosidase synthesis | Report 6  MDH Introduction Draft |
| 8 | NO LECTURE | MDH Hypothesis video conference discussion with collaborator | Report 7 |
|  | **FALL BREAK** |  |  |
| 9 | Enzyme Kinetics | Expt.8 Enzyme Kinetics: -galactosidase | Revised “Introduction” and “Hypothesis” |
| 10 | MDH project Discussion | Purification of MDH Mutant, Bradford | Report 8 |
| 11 | MDH project Discussion | Specific Activity / Activation Energy,  Effect of pH | Enzyme Activity measurement draft |
| 12 | MDH project Discussion | Specific Activity / Activation Energy,  Effect of pH |  |
|  | **THANKSGIVING BREAK** |  |  |
| 13 | MDH project Discussion | Repetition of key experiments  ***Lab Check Out*** | Data Analysis |
| 14 | NO LECTURE | **MDH Project Presentation** | MDH Written Report |