

Spring 2014

Course syllabus

**HUN 6812 Analytical Techniques in Nutritional Biochemistry** (1 credit)

The HUN 6812 course is presented in a lecture/demonstration format. Appropriate current literature is also presented and discussed. A few tours to UF campus core facilities are included since a large campus provides a wealth of exposure to new technologies and methods.

The philosophy behind the course is that research in the nutritional sciences draws upon a wide variety of methodologies, hence exposure to the theory behind these methods and interpretation of the data obtained is important to appreciate the current literature.

Topics to be discussed during the semester are:

Experimental Diet Preparation  
Tissue Preparation and Centrifugation  
Radio-isotopes  
Stable Isotopes  
Spectrophotometric Methods  
Chromatography  
Molecular Biology-Microarrays-Genomics  
Molecular Biology-Knockout models  
Electrophoresis and Western Analysis  
Cell Culture/Primary Cell Isolation  
Metabolomics  
Flow Cytometry/ELISA/Immune Function Assays  
Metabolic Capabilities of FSHN & CTSI

A textbook for the course that would be most helpful to you is:

Barker, K. *At the Bench, A Laboratory Navigator (Updated Edition)*. Cold Spring Harbor Laboratory Press, 2005 ISBN 978-0-879697-08-2.

The class will meet once per week.

Quizzes will be given at the end of class on the following weeks ( January 27, February 17, March 10, March 31 and April 21). The final course grade will be based on the average of those five quizzes.

E-mail me ([cousins@ufl.edu](mailto:cousins@ufl.edu)) or stop by my office FSHN 201 if you have questions. Office hours are by appointment.

Dr. Cousins

Spring 2014 Schedule of Topics

**Hun 6812 Analytical Techniques in Nutritional Biochemistry**

Week of:

January 13 Experimental Diets

January 20 Experimental Diets

January 27 Tissue Preparation, Centrifugation

February 3 Radio-Isotopes Quiz

February 10 Stable Isotopes

February 17 Spectroscopy Quiz

February 24 Chromatography

Spring Break

March 10 Molecular Biology/Genomics/Microarray Assays Quiz

March 17 Molecular Biology/Knockout Mice

March 24 Electrophoresis/Western Blot

March 31 Cell Culture/Primary Cells Quiz

April 7 Metabolomics

April 14 Flow Cytometry/ELISA

April 21 FSHN Metabolic Lab and CTSI Tour Quiz