FOS 4936 – TECHNOLOGY OF FATS & OILS AND THEIR APPLICATION IN FOOD

Spring Semester 2015
3 Credit Hours
Section 06D1

Lecture Sessions:  Monday & Wednesday
                  Monday – Periods 2-3 / Wednesday – Period 2
                  8:30 AM to 10:25AM / 8:30AM to 9:20AM
                  Monday – AND 0134 / Wednesday – NZH 0112

Instructors:     Dr. Gloria Cagampang and Dr. George L. Baker IV

Office Location: Food Science & Human Nutrition Building
                  Newell Drive, Room 467B

Office Phone:    (352) 392-1991 x218

Email:           glba@ufl.edu

E-learning:      http://lss.at.ufl.edu

Office Hours:    10:30AM to 11:30AM on Monday (or by appointment)

Required Text:   Course Packet – Posted in Sakai (provided by Instructor)

Course Objectives: Provide an overview of agronomy, production, and trade of the current major domestic and offshore oilseeds (soybean, canola and palm); understand critical parameters involved in the extraction, refining, bleaching, and deodorization of fats and oils; define methods to modify fats and oils (hydrogenation, blending, interesterification, emulsification, crystallization) for functional use in foods; understand handling and preservation of fats and oils for safety and quality; identify the cause and methods to determine chemical changes in fats and oils during storage, such as oxidative stability.

Course Schedule:
WEEK 1 – JANUARY 6TH THRU JANUARY 11TH
  Course Introduction
  Review syllabus

WEEK 2 – JANUARY 12TH THRU JANUARY 18TH
  Canola Oil Technology

MARTIN LUTHER KING JR. HOLIDAY – JANUARY 19TH

WEEK 3 – JANUARY 19TH THRU JANUARY 25TH
  Malaysian Palm Oil Technology

WEEK 4 – JANUARY 26TH THRU FEBRUARY 1ST
  Malaysian Palm Oil Technology
  Colombian High Oleic Palm Oil Technology

WEEK 5 – FEBRUARY 2ND THRU FEBRUARY 6TH
  Soybean Oil Technology

WEEK 6 – FEBRUARY 9TH THRU FEBRUARY 15TH
  Basic Science of Fats & Oils
  Stability & Oxidation of Fats & Oils
WEEK 7 – FEBRUARY 16TH THRU FEBRUARY 22ND
Fatty Acid Analyses in the Food Industry
Exam 1 Review

WEEK 8 – FEBRUARY 23RD THRU MARCH 1ST
Exam 1 – February 23rd, 2014 (8:30AM – 10:25AM)
Modification of Fats & Oils: Breeding, Hydrogenation, Fractionation, Emulsification & Interesterification

SPRING BREAK – MARCH 2ND THRU MARCH 8TH

WEEK 9 – MARCH 9TH THRU MARCH 15TH
Modification of Fats & Oils: Crystallization & Flowsheet

WEEK 10 – MARCH 16TH THRU MARCH 22ND
Modification of Fats & Oils: Calculation & Problem Solving
Nutritional Information on Fats & Oils Intake: Studies

WEEK 11 – MARCH 23RD THRU MARCH 29TH
Studies on the Nutraceutical Components of Virgin Palm Oils
Exam 2 Review

WEEK 12 – MARCH 30TH THRU APRIL 5TH
Exam 2 – March 30th, 2014 (8:30AM – 10:25AM)
Application of Fats & Oils in Specific Food Systems
Analysis of Fat & Oil Oxidation

WEEK 13 – APRIL 6TH THRU APRIL 12TH
Fatty Acid Profile by Gas Chromatography
Current Topics on Partially Hydrogenated Oils

WEEK 14 – APRIL 13TH THRU APRIL 19TH
trans- Fatty Acid Analysis
Exam 3 Review

WEEK 15 – APRIL 20TH THRU APRIL 23RD
Exam 3 – April 20th, 2014 (8:30AM – 10:25AM)

Examinations:
- Exam 1 – February 23rd, 2014 (8:30AM – 10:25AM)
- Exam 2 – March 30th, 2014 (8:30AM – 10:25AM)
- Exam 3 – April 20th, 2014 (8:30AM – 10:25AM)

Exams will be a mixture of multiple choice, short answer, and essay questions, taking place during normal lecture periods.

EXAM DATES ARE SUBJECT TO CHANGE WITH REASONABLE PRIOR NOTICE, ANNOUNCED DURING LECTURE & POSTED TO SAKAI

Make-up Exams:
Make-up exams will be allowed only on the basis of extreme emergency upon the discretion of the Instructor. Students should make a concerted effort to contact the Instructor personally PRIOR to the scheduled exam date.

Scoring:
- Three (3) Examinations (30% each) 90%
- Attendance & Participation 10%
- Total 100%
Grading Scale: Percentage Based System

A → 90% to 100%
A- → 86% to 89%
B+ → 83% to 85%
B → 80% to 82%
B- → 76% to 79%
C+ → 73% to 75%
C → 70% to 72%
C- → 66% to 69%
D+ → 63% to 65%
D → 60% to 62%
D- → 56% to 59%
E → 0% to 55%

Class Rules:
- Please turn off all cell phones and/or communication devices during lecture and especially during exams.
- If you need to have a conversation with a friend, please take your discussion outside and come back quietly when you are finished.
- If you are late for lecture, please enter quietly and have a seat at the nearest spot available.
- Please feel free to ask the instructor questions during lectures or exams.
**Student Complaints:**
Each online distance learning program has a process for, and will make every attempt to resolve, student complaints within its academic and administrative departments at the program level. See [http://distance.ufl.edu/student-complaints](http://distance.ufl.edu/student-complaints) for more details.

**Grades and Grade Points**
For information on current UF policies for assigning grade points, see: [https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx](https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx)

**Absences and Make-Up Work**
Requirements for class attendance and make-up exams, assignments and other work are consistent with university policies that can be found at: [https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx](https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx)

**Academic Honesty**
As a student at the University of Florida, you have committed yourself to uphold the Honor Code, which includes the following pledge: *"We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity."* You are expected to exhibit behavior consistent with this commitment to the UF academic community, and on all work submitted for credit at the University of Florida, the following pledge is either required or implied: *"On my honor, I have neither given nor received unauthorized aid in doing this assignment."*
It is assumed that you will complete all work independently in each course unless the instructor provides explicit permission for you to collaborate on course tasks (e.g. assignments, papers, quizzes, exams). Furthermore, as part of your obligation to uphold the Honor Code, you should report any condition that facilitates academic misconduct to appropriate personnel. It is your individual responsibility to know and comply with all university policies and procedures regarding academic integrity and the Student Honor Code. Violations of the Honor Code at the University of Florida will not be tolerated. Violations will be reported to the Dean of Students Office for consideration of disciplinary action. For more information regarding the Student Honor Code, please see: [http://www.dso.ufl.edu/SCCR/honorcodes/honorcode.php](http://www.dso.ufl.edu/SCCR/honorcodes/honorcode.php)

**Software Use:**
All faculty, staff and students of the university are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against university policies and rules, disciplinary action will be taken as appropriate.

**Campus Helping Resources**
Students experiencing crises or personal problems that interfere with their general well-being are encouraged to utilize the university’s counseling resources. The Counseling & Wellness Center provides confidential counseling services at no cost for currently enrolled students. Resources are available on campus for students having personal problems or lacking clear career or academic goals, which interfere with their academic performance.

*University Counseling & Wellness Center, 3190 Radio Road, 352-392-1575, [www.counseling.ufl.edu/cwc/](http://www.counseling.ufl.edu/cwc/)*
  Counseling Services
  Groups and Workshops
  Outreach and Consultation
  Self-Help Library
  Training Programs
  Community Provider Database

*Career Resource Center, First Floor JWRU, 392-1601, [www.crc.ufl.edu/](http://www.crc.ufl.edu/)*

**Services for Students with Disabilities**
The Disability Resource Center coordinates the needed accommodations of students with disabilities. This includes registering disabilities, recommending academic accommodations within the classroom, accessing special adaptive computer equipment, providing interpretation services and mediating faculty-student disability related issues. Students requesting classroom accommodation must first register with the Dean of Students Office. The Dean of Students Office will provide documentation to the student who must then provide this documentation to the Instructor when requesting accommodation. 0001 Reid Hall, 352-392-8565, [www.dso.ufl.edu/drc/](http://www.dso.ufl.edu/drc/)