

# 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](mailto: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 6<sup>th</sup> THRU JANUARY 11<sup>th</sup>  
Course Introduction  
Review syllabus
- WEEK 2 – JANUARY 12<sup>th</sup> THRU JANUARY 18<sup>th</sup>  
Canola Oil Technology
- MARTIN LUTHER KING JR. HOLIDAY – JANUARY 19<sup>th</sup>*
- WEEK 3 – JANUARY 19<sup>th</sup> THRU JANUARY 25<sup>th</sup>  
Malaysian Palm Oil Technology
- WEEK 4 – JANUARY 26<sup>th</sup> THRU FEBRUARY 1<sup>st</sup>  
Malaysian Palm Oil Technology  
Colombian High Oleic Palm Oil Technology
- WEEK 5 – FEBRUARY 2<sup>nd</sup> THRU FEBRUARY 6<sup>th</sup>  
Soybean Oil Technology
- WEEK 6 – FEBRUARY 9<sup>th</sup> THRU FEBRUARY 15<sup>th</sup>  
Basic Science of Fats & Oils  
Stability & Oxidation of Fats & Oils

WEEK 7 – FEBRUARY 16<sup>TH</sup> THRU FEBRUARY 22<sup>ND</sup>

Fatty Acid Analyses in the Food Industry  
Exam 1 Review

WEEK 8 – FEBRUARY 23<sup>RD</sup> THRU MARCH 1<sup>ST</sup>

**Exam 1 – February 23<sup>rd</sup>, 2014 (8:30AM – 10:25AM)**

Modification of Fats & Oils: Breeding, Hydrogenation, Fractionation, Emulsification & Interesterification

*SPRING BREAK – MARCH 2<sup>ND</sup> THRU MARCH 8<sup>TH</sup>*

WEEK 9 – MARCH 9<sup>TH</sup> THRU MARCH 15<sup>TH</sup>

Modification of Fats & Oils: Crystallization & Flowsheet

WEEK 10 – MARCH 16<sup>TH</sup> THRU MARCH 22<sup>ND</sup>

Modification of Fats & Oils: Calculation & Problem Solving  
Nutritional Information on Fats & Oils Intake: Studies

WEEK 11 – MARCH 23<sup>RD</sup> THRU MARCH 29<sup>TH</sup>

Studies on the Nutraceutical Components of Virgin Palm Oils  
Exam 2 Review

WEEK 12 – MARCH 30<sup>TH</sup> THRU APRIL 5<sup>TH</sup>

**Exam 2 – March 30<sup>th</sup>, 2014 (8:30AM – 10:25AM)**

Application of Fats & Oils in Specific Food Systems  
Analysis of Fat & Oil Oxidation

WEEK 13 – APRIL 6<sup>TH</sup> THRU APRIL 12<sup>TH</sup>

Fatty Acid Profile by Gas Chromatography  
Current Topics on Partially Hydrogenated Oils

WEEK 14 – APRIL 13<sup>TH</sup> THRU APRIL 19<sup>TH</sup>

*trans*- Fatty Acid Analysis  
Exam 3 Review

WEEK 15 – APRIL 20<sup>TH</sup> THRU APRIL 23<sup>RD</sup>

**Exam 3 – April 20<sup>th</sup>, 2014 (8:30AM – 10:25AM)**

**Examinations:**

**Exam 1 – February 23<sup>rd</sup>, 2014 (8:30AM – 10:25AM)**

**Exam 2 – March 30<sup>th</sup>, 2014 (8:30AM – 10:25AM)**

**Exam 3 – April 20<sup>th</sup>, 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)  
- Attendance & Participation

90%  
10%  
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> 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>

### **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>

### **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>

### **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/)