

COURSE OUTLINE

FDSC 4111L: Food Analysis Laboratory

Catalog Description: Laboratory exercises providing students with experience of analytical techniques and instrumentation used in food analysis. Co-requisite: FDSC 4113.

Lab Manual: The lab manual can be purchased at the University Bookstore. All students must purchase their own lab manual. **Bring your lab manual to lab.** The lab manual will serve to guide you through the exercise and to collect raw data.

Lab Time: Students are expected to arrive to lab on time. Most labs will take the entire lab time (3 hr) to complete. Students should not expect or plan to leave lab early. The experiments are designed so that they can be completed in the allotted lab time. The instructor will provide further instructions if time runs out.

Lab Dress Code: Lab coats are required and students must purchase your own lab coat. In order to avoid contact with the chemical used in some of the laboratory exercises you should dress appropriately. Long pants that cover well below the knees are required. Shorts, high heels, halter-tops, tank tops, etc. are not allowed in the laboratories. Students must wear close-toed shoes and the shoes may not be backless. A **zero tolerance** policy regarding safety is in effect and will be rigidly enforced after the first check-in day. **If a student is asked to leave lab due to a dress code violation after the check-in day, that student will not be given a make-up assignment (a grade of zero for that lab).**

Partners: All labs will be performed in pairs and groups. Neither person in the pair may leave the lab until **all** lab work and clean-up are completed. Any person who leaves the lab without helping their partner complete the lab work and clean-up will be given a zero for that lab.

Re-grade Policy: If a student finds an error in their graded work, they have one week after the graded work is given back to submit the work to the lab instructor for a re-grade. If a student finds an error in their graded work after the one-week deadline, the points **will not** be given back.

Procedure to follow if you missed lab: Reschedules no longer exist for lab courses. Students who miss lab will be given a make-up assignment or lab for the following **documented** reasons **only**: illness, official university event, funeral (must provide a program from the service), or accident (must provide an accident report, towing receipt, or repair receipt). No student will be given a make-up lab if they miss lab due to: over sleeping, personal trips, a job, club/Greek events, or leaving early for or coming back late from any university holiday.

If a student has a valid excuse for missing a lab, then the student should email the instructor as soon as they know that they are going to miss the lab. Students have one week from the date of the missed lab to give their TA the appropriate absence documentation. **Students who do not contact the instructor and provide the appropriate documentation within one week of the missed lab will no longer**

be eligible for a make-up lab. Once documentation is provided, the instructor will schedule the make-up lab within a week.

Absences: Absences without valid excuses are graded as zero. **Three or more invalid absences will result in an F in the course. If, for reasons beyond your control, you are forced to miss more than a total of three labs (excused or unexcused) you must withdraw from the lab.**

Make-up Lab: Any make-up lab that the student fails to show up will automatically be graded as a zero.

Housekeeping: It is our intention to provide you with a clean work environment and good laboratory equipment with which to do the laboratory exercises. **Therefore, when a student done using the equipment it is their responsibility to clean and return each item to a designated area in the laboratory.** It is also their responsibility to use proper laboratory procedures when dispensing reagents in order to avoid contamination.

Evaluation: Before each Lab the student must read the procedure for the Lab and draw out a flow chart of the procedure on what you are going to do in the Lab. This will be checked and graded as part of the Lab report (representing the procedure section).

Laboratory Report Format

Each lab report should be typewritten (except the procedure part) and is due one week after the data are collected. The lab report will be graded as zero if the lab report is not turned in on time. The report will contain the following sections:

1. Student name and date
2. Experiment number and title
3. Procedures (flow chart)
4. Results of the lab organized in tables or charts and calculations
5. Brief Discussion (interpret each of the results obtained during the lab). *What do your results mean? Why do your results differ from those of other groups or have a large variation?*
6. Brief Conclusion- what can you say conclusively about your samples?
7. Answers to Questions

Lab Grades: The grade for this course will be mainly determined as the follows. However, changes may be made to accommodate additional assignments. Grades will be assigned based on the following **exact** point ranges (not by percentages):

<u>Category</u>	<u>Points</u>
Lab report – 40 points each	400
Lab participation, Etiquette and Safety – 10 point each	100
<u>Team project report & presentation</u>	<u>100</u>
Total	600 points

600-540 = A, 539-480 = B, 479-420 = C, 419-360 = D, 359-below = F

Class cancellation: Class will be cancelled as a result of inclement weather if the University is closed. If other emergencies occur, students will be notified as soon as possible. You can contact Dr. Ya-Jane Wang by calling 575-3871 (work) or by e-mail at yjwang@uark.edu.

Academic honesty: As a core part of its mission, the University of Arkansas provides students with the opportunity to further their educational goals through programs of study and research in an environment that promotes freedom of inquiry and academic responsibility. Accomplishing this mission is only possible when intellectual honesty and individual integrity prevail. Each University of Arkansas student is required to be familiar with and abide by the University's 'Academic Integrity Policy' which may be found at <http://provost.uark.edu/245.php>

There are companies that will try to lure you into selling the notes you take in this class. Don't let these companies take advantage of you. Selling my notes to any commercial service I will consider a violation of my intellectual property rights and/or copyright law as well as a violation of the U of A's academic integrity policy. Continued enrollment in this class signifies intent to abide by the policy. Any violation will be reported to the Office of Academic Initiatives and Integrity.

Students with disability: If you need an accommodation due to a disability, please make arrangements to discuss this with the instructor during the first two weeks of the semester.

Emergency Procedures: Many types of emergencies can occur on campus; instructions for specific emergencies such as severe weather, active shooter, or fire can be found at emergency.uark.edu.

Severe Weather (Tornado Warning):

- Follow the directions of the instructor or emergency personnel
- Seek shelter in the basement or interior room or hallway on the lowest floor, putting as many walls as possible between you and the outside
- If you are in a multi-story building, and you cannot get to the lowest floor, pick a hallway in the center of the building
- Stay in the center of the room, away from exterior walls, windows, and doors

Violence / Active Shooter (CADD):

- **CALL** - 9-1-1
- **AVOID** - If possible, self-evacuate to a safe area outside the building. Follow directions of police officers.
- **DENY** - Barricade the door with desk, chairs, bookcases or any items. Move to a place inside the room where you are not visible. Turn off the lights and remain quiet. Remain there until told by police it is safe.
- **DEFEND** - Use chairs, desks, cell phones or whatever is immediately available to distract and/or defend yourself and others from attack.

Week	Laboratory Topics
1 Jan. 19	Lab overview: guidelines, safety, and report Introduction of lab facility
2 Jan. 26	Lab 1: Review of basic operation
3 Feb. 2	Lab 2: Acids, bases, pH, and Titratable acidity
4 Feb. 9	Lab 3: Sample preparation Moisture analysis and dry ashing
5 Feb. 16	Lab 4: Mineral analysis
6 Feb. 23	Lab 5: Protein analysis
7 Mar. 2	Lab 6: Crude fat analysis
8 Mar. 9	Lab 7: Fat characterization
9 Mar. 16	Lab 8: Carbohydrate analysis
10 Mar. 23	Spring break
11 Mar. 30	Lab 9: Total dietary fiber Glucose determination by enzymatic assay
12 Apr. 6	Lab 10: Ascorbic acid analysis Infrared spectroscopy demo
13 Apr. 13	Lab. 11 Analytical Lab tour or GC/HPLC/DSC demo
14 Apr. 20	Lab. 12 Problem solving in food analysis – Team project
15 Apr. 27	Lab. 12 Problem solving in food analysis – Team project
16 May 4	Project presentation