

**FDSC 6123**  
**Food Carbohydrate Chemistry**  
**Fall 2016**

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Office hours: You may make an appointment or just drop in.

**Catalog Description:** FDSC 6123 - Food Carbohydrate Chemistry (Fall, Even years). Focus is on food carbohydrate chemistry including molecular structures, physicochemical properties, analytical methods, manufacturing, applications, and interactions among food polysaccharides. Lecture 2 times per week.

**Textbook:** None.

**References:**

1. Carbohydrate Chemistry for Food Scientists. 1997. Whistler and BeMiller. AACC, Inc.
2. Food Carbohydrate Chemistry. 2012. Ronald E. Wrolastad. Wiley-Blackwell.
3. Food Polysaccharides and Their Applications. 2006. Edited by Stephen, Phillips, and Williams. 2<sup>nd</sup> Ed. CRC Press.
4. Carbohydrates in Food. 2006. Edited by Eliasson. CRC Press.
5. Starches. 1999. Thomas and Atwell. AACC, Inc.
6. Essentials of Carbohydrate Chemistry. 1998. Robyt. Springer Publisher.
7. Food Carbohydrates: Chemistry, Physical Properties, and Applications. 2005. Edited by Cui. CRC Press.
8. Technology of Corn Wet Milling and Associated Processes. 1992. Paul Blanchard. Elsevier.
9. Handbook of Hydrocolloids. 2000. Edited by Phillips and Williams. CRC Press.

The listed references will be available for check out from Food Science Department main office.

**Course Objectives:**

1. To understand the molecular structures of carbohydrates and their properties, functionalities, and applications.
2. To study the carbohydrate derivatives via chemical, physical, and enzymatic modifications.
3. To study the analytical methods to characterize carbohydrates.
4. To introduce various areas of research and research techniques employed in carbohydrate chemistry.

**Class Procedure:** Two 75-min lectures per week.

**Homework:** Students will be provided with homework problems to reinforce discussions. Students are encouraged to work with other students in the class.

**Special Topic Assignment:**

Each student is required to select one polysaccharide for study and presentation from a list of polysaccharides provided by the instructor. Each student is expected to work with the instructor to fully understand the topic to be able to present the topic in the class. The assignment will include selection of a relevant publication from a scientific journal, a handout describing the polysaccharides, a power point presentation with demo to explain the structure and properties of the chosen polysaccharide(s). The demo products will include functional property and at least an edible product/dish prepared by the student before or during the class to illustrate the unique properties of the chosen polysaccharide. The detailed format will be provided by the instructor.

**Evaluation Methods:**

All exams and special topic assignment are expected to be professional quality. No late work will be accepted without prior approval from the instructor. No make-up exams will be given unless if there is advanced permission and justifiable reason for missing the exam. Make-up exam will be comprehensive and taken during the final week. The grade for this course will be mainly determined as the follows. However, changes may be made to accommodate additional assignments.

Two midterm exams - 25% each	50%
Final comprehensive exam	25%
Special topic assignment	15%
Homework Assignments	10%

<u>Composite</u>	
<u>Score</u>	<u>Grade</u>
93-100	A
90-92	A-
87-89	B+
83-86	B
80-82	B-
77-79	C+
73-76	C
70-72	C-
67-69	D+
63-66	D
60-62	D-

**Attendance:** Every student is expected to attend and participate in class. The student is responsible for obtaining notes and materials for the class he/she missed.

**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](mailto:yjwang@uark.edu).

**Academic honesty:** The University policy for academic honesty will be followed. It is our intention that no student will receive a credit if a dishonest act on his or her part is evident relative to the work assigned. Students are expected to work independently on term papers.

**Students with disability:** If you need an accommodation due to a disability, please make arrangements to discuss this with me 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](http://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's safe.
- **DEFEND-** Use chairs, desks, cell phones or whatever is immediately available to distract and/or defend yourself and others from attack.

