

## FOOD SCIENCE 5720 – Food Product Development

SEMESTER: Fall 2020  
TIME: Tuesday and Thursday 1:50 – 4:30 pm  
LOCATION: Lectures: 118 Parker Food Science Building  
Laboratory: FST Pilot Plant (Howlett Hall)

INSTRUCTOR: Christopher T. Simons  
OFFICE: 315 Parker Food Science Building  
PHONE: 688-1489  
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OFFICE HOURS: By Appointment

CO-INSTRUCTOR: Ron Harris (by appointment)

TAs:	Brianne Linne	Theresa Pham
EMAIL:	<a href="mailto:linne.8@osu.edu">linne.8@osu.edu</a>	<a href="mailto:pham.314@osu.edu">pham.314@osu.edu</a>
OFFICE HOURS:	By appointment	By appointment

TEXTBOOKS: No Required Textbooks

RESERVE MATERIALS (Agriculture Library)

Smith J, Charter E 2010 Functional food product development. IFT Press, Wiley-Blackwell, Indianapolis, IN

Moskowitz H R, Saguy I M, Strauss T eds. 2009 An integrated approach to new product development. CRC Press, Boca Raton, FL.

Brody A L, Lord J B 2008 Developing new food products for a changing market place., 2nd ed. CRC Press, Boca Raton, FL.

Mc Fie H 2007 Consumer led food product development. CRC Press, Boca Raton, FL

Fuller, G. W. 2004 New food product development: from concept to marketplace CRC Press, Boca Raton, FL

**Course Structure:** Due to COVID precautions, our class size exceeds the limits for the maximum number of students in Parker 118 is 25. As such, for the first 3 weeks, lectures will be given in 2 sections as follows:

Section 1: Lecture from 1:50-3:05 PM

Section 2: Lecture from 3:15-4:30 PM

If your OSU email ends in an even number, you will be in Section 1. If your OSU email ends in an odd number, you will be in Section 2.

Students will be divided into Product Development Teams consisting of *ca.* 4-5 students as determined by the Instructor. After week 3, Section 1 will meet for lectures on Tuesdays and will work in the laboratory on Thursdays. In contrast, Section 2 will work in the laboratory on Tuesdays and meet for lectures on Thursdays. **NOTE- Class will not divide until the week of September 15 and 17.**

**Course Description & Philosophy:** The commercial end result of food science is the delivery of acceptable foods to consumers. This course will immerse students in the product development process using the product development team approach that is prevalent in the food industry. Students will be required to access resources in a variety of ways to acquire the knowledge necessary to successfully complete their project assignment. As in the industry, achievement of team goals will be rewarded.

Students will give attention to the three major components of food product development:

1. Development and evaluation of a food product concept.
2. Development of a protocept food product, including development of a HACCP plan, labeling, packaging and evaluation of product attributes, safety and shelf-life.
3. Market evaluation of the protocept product.

**Goals of this course:** Upon completion of this course, students should

1. be able to identify the processes and stages required to bring a new food product from conception to commercialization.
2. have produced in the laboratory a protocept of a new product that has a high probability that it could be produced commercially.
3. understand how to write a product formula and finished product specifications.
4. know what technical and scientific data must be available before a product can be manufactured.
5. be aware of the dynamics of working on a product development team.
6. develop skills necessary to communicate effectively to technical and business colleagues.

**Team Learning:** Much of the work in this class will be completed and turned in as a team. It is essential that each student contributes to the overall effort of the group and we suggest the group divides the responsibilities for each project. Moreover, successful teams have clear expectations that each member adheres to. Your team will be expected to come up with a set of expectations that all members will agree to.

## **Requirements.**

**Written Reports:** There will be three written reports to be submitted by each team. Written reports should be no more than 5 pages (single spaced) and should include supporting data and work. Written reports should delineate the process and details made by each team that contributed to the decisions leading to the current status. Specific instructions as to what information should be included in each report will be handed out in lecture.

- Written Report 1: Concept Development (Due September 15 or 17)
- Written Report 2: Protocept Development (Due October 20 or 22)
- Written Report 3: Final prototype development and market potential assessment (Due December 3)

**Oral Reports:** Teams will prepare 2 oral reports during the semester. Oral reports should be 20 minutes and the expected content will be described when the reports are assigned. Each member of the Team is expected to verbally present a portion of the report.

- Oral Report 1: Concept Development (Due September 15 or 17)
- Oral Report 2: Final Product Report (Due December 3)

**Problem Sets & Homework:** There will be 10 homework assignments—1 individual assignment and 9 team assignments. In most cases, teams will have time at the end of the lecture to work on homework assignments. Not all assignments can be completed by the end of lecture. It is expected that Teams will get together outside of class to finish assignments as needed. Even though most problem sets are to be turned in by Teams, you should be able to do the work independently—you might be quizzed on your ability to do so. In most cases homework will be used as supporting data for oral and written reports, thus take them seriously!

**Exams & Quizzes:** There are NO midterm or final examinations. Four quizzes will be given during the semester and cover materials presented in preceding lectures.

- Quiz 1: September 10 (Lectures 1-4)
- Quiz 2: October 6 (Lectures 5-7)
- Quiz 3: October 29 (Lectures 8-10)
- Quiz 4: November 17 (Lectures 11-13)

On the day of the quiz, students in the laboratory section will take the quiz in the Pilot Plant and turn it in to the TA. Afterwards, they will continue with the development work.

**Participation & Peer Review:** Successful projects require that all members of the Team contribute. Participation means attending all classes and being on time, being an equal partner in the activities of the group and entering into discussion during lectures and recitations. Teamwork is critical to the success of any project and listening and respect for others opinions is an important component of teamwork.

Team members are best positioned to evaluate the participation and teamwork of each other. Three times this semester, every student will turn in an evaluation of the other members of their team. Evaluations will be turned in directly to the Instructor and will be used in the computation of the Final Grade. Peer reviews will be turned in following submission of the Team Reports.

### **Grading**

Oral Reports		15%
• Concept Brief	(5%)	
• Final Product	(10%)	
Written Reports		40%
• Report 1	(10%)	
• Report 2	(10%)	
• Report 3	(20%)	
Quizzes		30%
Homework		5%
Participation & Peer Review		10%

Grading will be based on a curve, but the following scores are guaranteed.

90%	No less than a A-
80%	No less than a B-
70%	No less than a C-
60%	No less than a D-

### **Academic Misconduct**

Academic misconduct is defined in the Code of the Student Conduct and the Rules of the University Faculty. For more information, see the following websites [http://studentaffairs.osu.edu/info\\_for\\_students/csc.asp](http://studentaffairs.osu.edu/info_for_students/csc.asp) & <http://www.acs.ohio-state.edu/offices/oaa/procedures/1.0.html>. Suspected academic misconduct will be referred automatically to the Committee on Academic Misconduct as required by Faculty Rules.

### **Disability**

Any student who feels s/he may need an accommodation based on the impact of a disability should contact me privately to discuss your specific needs. Please contact the Office for Disability Services at 614-292-3307 in room 150

## Pomerene Hall to coordinate reasonable accommodations for students with documented disabilities.

The university strives to make all learning experiences as accessible as possible. In light of the current pandemic, students seeking to request COVID-related accommodations may do so through the university's request process, managed by Student Life Disability Services. If you anticipate or experience academic barriers based on your disability (including mental health, chronic, or temporary medical conditions), please let me know immediately so that we can privately discuss options. To establish reasonable accommodations, I may request that you register with Student Life Disability Services. After registration, make arrangements with me as soon as possible to discuss your accommodations so that they may be implemented in a timely fashion. SLDS contact information: [slds@osu.edu](mailto:slds@osu.edu); 614-292-3307; [slds.osu.edu](http://slds.osu.edu); 098 Baker Hall, 113 W. 12th Avenue.

### **COVID19**

**REQUIRED** Safety and health requirements: All teaching staff and students are required to comply with and stay up to date on all University safety and health guidance, which includes wearing a facemask in any indoor space and maintaining a safe physical distance at all times. Non-compliance will be warned first and disciplinary actions will be taken for repeated offenses.

The uncertainties associated with COVID19 dictate that we be flexible in our instructional and learning practices. In the event that in-class instruction is cancelled, we will pivot to a virtual model.

*Lectures.* Lectures will be accessible "live" via Zoom during scheduled class times. In addition, to accommodate varying schedules, recorded lectures will be posted to Carmen and available on demand. During the "live" Zoom class meetings, I expect that students will join by activating their video. Teaching is much more effective if the instructor can see each student's face and gauge their level of understanding. In addition, when joining the Zoom lecture, each student should have a neutral color and non-distracting background. Any student whose background violates this policy will be excused from the lecture.

*Laboratory.* As physical laboratory work would not be possible, each team will continue to develop their selected product on the basis of the principles covered in class with descriptions of possible work along the path of development.