

FST 5730: Technical Problem Solving

Course Syllabus; Spring 2020

Instructor: Dr. Emmanuel Hatzakis
233 Parker Food Science and Technology Building
Office Phone: 614-688-2731
e-mail: chatzakis.1@osu.edu

Instructor: Dr. Rafael Jimenez-Flores
329 Parker Food Science and Technology Building
Office Phone: 614-292-1993
e-mail: jimenez-flores.1@osu.edu

Instructor: Dr. John Litchfield
211 Parker Food Science and Technology Building
Office Phone: 614-424-7624 211
e-mail: litchfield.3@osu.edu

Teaching Assistant: Kathryn Williamson
e-mail: williamson.440@buckeyemail.osu.edu

Staff

Matt Chrusciel,
Teaching Laboratory Manager
227C Parker Food Science and Technology Building
chrusciel.3@osu.edu

Papic, Matt
Food Processing Pilot Plant Supervisor
110 Parker Food Science and Technology Building
papic.1@osu.edu

Wenneker, Gary
Pilot Plant Manager
Parker Food Science and Technology Building
wenneker.1@osu.edu

Credits: 3 credit hours; This course involves lectures and lab/pilot plants but also requires a continuous communication and supervision of the students even outside of the class hours. Due to the nature of the course, the time lengths for lectures and labs are fluctuating, but as an average it involves 80 min of lecture and about 5-6 hours of lab work. Additional time is usually required to communicate with companies as well as receive and send products and raw materials.

Class Times: Lecture and Laboratories To be scheduled
Office Hours: By appointment

Format of instruction: Lecture, lab

Course Description:

The purpose of this course is to help students develop the skills required to address problems in the practical application of food industry. The assigned problems will be short term, where students have four weeks to provide solutions, as well as long term, where students have ten weeks to provide solutions. At the end of the course, students should be able to apply critical thinking and combine/integrate knowledge from previous courses to address issues and challenges in the food industry. Basic concepts of food science will also be discussed in the class when required.

The course is open to undergraduate and graduate students. Although the assessment is similar, the graduate students have a more leading role and they are evaluated based on how they perform as team leaders. Undergraduate students have a more executive role and they are assessed based on how they follow the plans and approach the technical problem.

Course/Learning Objectives

- Learn the principles of problem solving
- Provide an opportunity to practice being a leader
- Improve technical writing skills
- Learn how to find information to solve problems
- Apply critical thinking and previous knowledge to solve real-life problems of the food industry

Content Topic List

- Magic formula for problem solving
- Sample problem solving
- Long term problem
- Basic Kinds of Problems
- Presentation Tips

Course Materials and References: Recommended Reading --- Hall, D. 1995. Jump Start your Brain. Werner Books. New York, NY Topic Outline:

Course outline

Students will be assigned with two short terms projects and one long term project.

DATE	CLASS	Assignment
1/7/2020	Course Overview; Introduction to basic concepts, Food issues, food sectors, food composition.	Grocery visit

1/9/2020	Tools, resources and strategies for technical problem solving. Examples.	
1/14/2020	Training project	Presentation for grocery visit due
1/16/2020	Team formation Lab/pilot plant visit	
1/21/2020	Introduction to ST and LT projects	
1/23/2020	Introduction to ST and LT projects. Project selection	
1/28/2020	Discuss the progress for ST1 projects	
1/30/2020	Discuss the progress for ST1 projects	
2/4/2020	Discuss the progress for ST1 projects Thoughts for the LT projects	
2/6/2020	Discuss the progress for ST1 projects	
2/11/2020	Discuss the progress for ST1 projects	
2/13/2020	Discuss the progress for ST1 projects	
2/18/2020	Discuss the progress for ST1 projects	
2/20/2020	Completion of the ST1 project	Final ST1 project reports due
2/25/2020	Review status of LT projects	
2/27/2020	Review status of LT projects	
3/3/2020	Review status of LT projects	
3/5/2020	Introduction to ST2 and discussion on the LT projects	
3/10/2020	Spring Break	
3/12/2020	Spring Break	
3/17/2020	Discuss the progress for ST2 projects	
3/19/2020	Discuss the progress for ST2 projects	
3/24/2020	Discuss the progress for ST2 projects	
3/26/2020	Discuss the progress for ST2 projects	
3/31/2020	Discuss the progress for ST2 projects	
4/2/2020	Discuss the progress for ST2 projects	
4/7/2020	Completion of the ST2 project	
4/9/2020	Review status of LT projects	Final ST2 project reports due
4/14/2020	Review status of LT projects	
4/16/2020	Review status of LT projects	
4/21/2020	Review status of LT projects	Draft of LT project reports due
4/23/2020	Oral presentation of final reports for LT projects	Final reports of LT projects due

Grading Scale

A = 100-93; A- = 92-90 B+ = 89-87; B = 86-83; B- = 82-80 C+ = 79-77; C = 76-73; C- = 72-70; D+ = 69-67; D = 66-63; E < 63

Evaluation of Student Progress

Short term project 1 report/presentation 20%

Short term project 2 report/presentation 20%

Long term project report/presentation 40%

Overall communication with instructors, TA and involved companies 20%

Description of the various graded elements

Short term projects: Projects related to real life problems of food industry that need to be completed in less than four weeks. They generally require literature search and lab work as well as efficient communication with people from industry.

Long term projects: Similar to short terms projects but with a higher degree of complexity. They need to be completed in less than ten weeks.

The main graded elements for short term and long term projects are the reports and the presentations. All the information regarding how to prepare them will be provided in the class in a separate lecture.

Overall communication with instructors, TAs and involved companies: Short term and long term projects require efficient collaboration and communication between the members of the teams, as well as between individual students with TAs and companies. Using a scale from 1 to 5 (1, min; 5 max) students will be evaluated for their performance on topics such as: how well they are prepared for the meetings with companies and how proactive they are in terms of designing their experiments (order ingredients on time, book instrumental time well in advance, give early notices to TA and facility managers for using equipment, etc).

Statement on academic misconduct

It is the responsibility of the Committee on Academic Misconduct to investigate or establish procedures for the investigation of all reported cases of student academic misconduct. The term “academic misconduct” includes all forms of student academic misconduct wherever committed; illustrated by, but not limited to, cases of plagiarism and dishonest practices in connection with examinations. Instructors shall report all instances of alleged academic misconduct to the committee (Faculty Rule 3335-5-487). For additional information, see the Code of Student Conduct <http://studentlife.osu.edu/csc/>.

Disability services statement

The University strives to make all learning experiences as accessible as possible. 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; 614-292-3307; slds.osu.edu; 098 Baker Hall, 113 W. 12th Avenue.

Mental health statement

As a student you may experience a range of issues that can cause barriers to learning, such as strained relationships, increased anxiety, alcohol/drug problems, feeling down, difficulty concentrating and/or lack of motivation. These mental health concerns or stressful events may lead to diminished academic performance or reduce a student’s ability to participate in daily activities. The Ohio State University offers services to assist you with addressing these and other concerns you may be experiencing. If you or someone you know are suffering from any of the

aforementioned conditions, you can learn more about the broad range of confidential mental health services available on campus via the Office of Student Life's Counseling and Consultation Service (CCS) by visiting ccs.osu.edu or calling 614-292-5766. CCS is located on the 4th Floor of the Younkin Success Center and 10th Floor of Lincoln Tower. You can reach an on call counselor when CCS is closed at 614-292-5766 and 24 hour emergency help is also available through the 24/7 National Suicide Prevention Hotline at 1-800-273-TALK or at suicidepreventionlifeline.org.