NFS 095: What’s Brewing in Food Science? Laboratory

Time/Location: 257 Marsh Life Sciences Building

Professor: Dr. Todd Pritchard (aka “Dr. Todd”)

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Office Hours: By Appointment. Send Email with request for meeting.

Number of Credits: 1.0

Prerequisites: Current enrollment or prior enrollment in NFS 033.

Course Description: This course is designed to educate students interested in the brewing industry on the techniques one might utilize in a quality assurance lab setting. Students will learn aseptic technique as well as staining, maintaining and evaluating yeast cultures for both viability and purity, sugar and alcohol content determination, how to make one’s own mash tun and immersion chiller as well as performing a single mash infusion, lautering, brew kettle dynamics and chilling.

Required Materials: There is no required book for the course. Students will download experiments from blackboard.

Course Format: This is a lab-based course. Students will engage in actual experiments designed to expand the materials presented in NFS 033 (What’s Brewing in Food Sciences?)

Students are expected to be present for every lab and to actively participate in all lab protocols.

Grading will be based on a combination of points obtained from:
  a) Attendance
  b) Preparation of pre-lab write ups
  c) Participating in actual lab
  d) Write up of materials presented during lab
Course Objectives: Upon completion of the course, students should be able to:

1) Understand the importance of sanitation and the utilization of aseptic technique in the manufacture of a food/beverage.
2) Properly utilize a microscope
3) Properly load and read a hemocytometer
4) Determine the percent viability of a yeast culture via staining and microscopy
5) Utilize solid plating media to ensure purity/differentiate wild yeast and or contaminating bacteria in suspect sample
6) Determine the specific gravity of a sample via the use of a hydrometer and or refractometer
7) Determine the estimated percent alcohol in a sample via a hydrometer
8) Perform a single mash infusion
9) Perform lautering and sparging of a mash
10) Identify the changes occurring during the brew kettle
11) Make their own combined mash/lauter tun
12) Make their own immersion chiller