

**Program Assessment Report  
Undergraduate Program in Food Science  
University of Arkansas  
Academic Year 2018-2019**

**1. Department Name & Contact Information**

Department of Food Science

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**2. Department Mission**

The mission of the Department of Food Science is to serve as the primary source of higher education, fundamental and applied research, and public service associated with enhancing the wholesomeness, quality and availability of food, improving the health of Arkansas residents, and adding value to raw agricultural products with particular emphasis on products relevant to Arkansas. The Department of Food Science promotes programs for achieving regional, national and international recognition of excellence while contributing to the advancement of the quality of life and professional development for Arkansans.

**3. Program Goals**

FDSC currently adheres to standards and learning outcomes approved by the Higher Education Review Board (HERB) of the Institute of Food Technologists (IFT) for undergraduate programs in Food Science and Technology (<http://www.ift.org/Community/Students/Approved-Undergrad-Programs.aspx>). As an approved program, we submit reports each year for review by the HERB. After our annual report submission in August 2018, it was announced that IFT would be revising the approval guidelines for programs which essentially placed overall program assessments on hold. While we continued to assess a few of our previously established learning outcomes in 2018-2019, the decision was made to delay assessment until new guidance from IFT was released. The new guidelines were made available in April 2019. Therefore, the revised program goals are as follows:

- 1. Graduates are competent in core areas of food science.**
- 2. Graduates can integrate and apply their knowledge.**
- 3. Graduates are proficient communicators.**
- 4. Graduates demonstrate professionalism and leadership skills**

Along with the revision of Program Goals, the Standards and corresponding Learning Outcomes have also now been defined by IFT and will be in place for the 2019-2020 academic year. See **Appendix 1** for a complete list of Standards and Learning Outcomes. Please note that, in adherence with IFT guidelines, the undergraduate assessment cycle will be on a rotation with 2 Standards and 3 corresponding Learning Outcomes assessed each year for 4 years and then 3 Standards and 2 corresponding Learning Outcomes assessed in Year 5. This will be a total of 11 standards and 30 learning outcomes over a 5-year period. We will provide this Action Plan in the 2019-2020 assessment document after we submit our plan for approval to IFT in October 2019.

**4. Student Learning Outcome 1.** Appreciates the importance of and is committed to professional integrity and ethical values within the workplace.

**A. Assessment Measure 1.**

- FDSC 431V: Internship in Food Science
- Observation of student performance by the supervisor of an industrial internship. The supervisor reports their observation by means of a questionnaire which is completed at the end of the internship.
- This measure is direct.
- The primary instructor for the course is Jamie Baum; however, the assessment is based on supervisor observation.
- Assessment measure tool (**Appendix 2**)

**B. Acceptable and Ideal Targets** (not required for indirect measures).

- The acceptable target is to have less than 25% of students in the Novice or Intermediate categories, with more than 20% in the Expert category. The ideal target is to have no student in the Novice or Intermediate categories, with more than 30% in the Expert category.

**C. Summary of Findings. (n = 24)**

	Novice	Intermediate	Advanced	Expert
Punctual in reporting to work, attending meetings and observing deadlines	0	0	6	18
Practices company ethics and values	0	2	9	13
Courteous and respectful to colleagues	0	0	1	23
Performs duties and interacts well with others in a professional manner	0	0	3	21

- Overall student performance greatly exceeded the prescribed criteria with the exception of two students in the intermediate category of one sub-category.
- The results are consistent with previous assessment years and indicate our undergraduate students are meeting or exceeding the program expectations. Based on this, the data are indicative of an undergraduate program in FDSC that prepares students for the workplace.

**D. Recommendations** (not required for indirect measures)

- While nearly all students were considered experts within most subcategories, there were two sub-categories where improvement could be had.
- First, being punctual and meeting deadlines is crucial to overall job performance, and 25% of students were *often* meeting this criteria. There is no reason that every student should not be in the expert level for punctuality and meeting deadlines. To address this, the importance of *always* meeting this behavior in the workplace will be emphasized by the course instructor prior to beginning an internship.
- Second, two students only *sometimes* practiced company ethics and values which is not a good reflection of the students. And then 38% adhered to company ethics and values *often*. There is

no reason that every student should not be in the expert level for practicing ethics and values of the company they are working for. To address this, the importance of *always* adhering to a company's ethics and values, the course instructor and internship committee will provide a presentation on exactly what this means. In addition, we will request feedback from the companies about training or orienting students to these practices.

**5. Student Learning Outcome 2.** Clearly communicates scientific principles and data to lay audiences

**A. Assessment Measure 2.**

- FDSC 431V: Internship in Food Science
- At the completion of the internship each student will give an oral presentation to the Internships Committee which comprises of four faculty members, the academic advisor and the department head. The presentation should contain a brief background of the company; what was done during the internship; and how what was learned in the classroom was useful during the internship. The presentation will be evaluated by each Committee member according to the direct measures in the rubric below. The final score for each direct measure is the average of Committee members' scores.
- This measure is direct.
- The primary instructor for the course is Jamie Baum; however, the assessment is based on committee feedback.
- Assessment measure tool (**Appendix 3**)

**B. Acceptable and Ideal Targets** (not required for indirect measures).

- The acceptable target is to have less than 25% of students in the Novice or Intermediate categories, with more than 20% in the Expert category. The ideal target is to have no student in the Novice or Intermediate categories, with more than 30% in the Expert category.

**C. Summary of Findings. (n = 24)**

	Novice	Intermediate	Advanced	Expert
Maintains good eye contact and rapport without excessive notes	0	0	7	17
Exhibits good body language that enhances the presentation	0	0	9	15
Controls anxiety to present a relaxed presentation without verbal errors	0	0	6	18
Speaks clearly with confidence, enthusiasm and authority	0	0	5	19
The presentation is concise, clear, logical and includes all the requested elements	0	0	4	20
Slides are clear, well organized with appropriate use of color and effect	0	0	2	22
Effectively answers related questions	0	0	2	22

- Student performance greatly exceeded the prescribed criteria for the acceptable target, but did not reach the ideal target of >30% expert level in each subcategory.
- These results are consistent with previous assessment years and indicate our undergraduate students are meeting or exceeding the program expectations.
- Based on this, the data are indicative of an undergraduate program in FDSC that prepares students to communicate scientific data and principles effectively.

**D. Recommendations** (not required for indirect measures)

- While nearly all students were considered experts within most subcategories, there were three sub-categories where improvement could be made. These subcategories (the first 3 on the rubric) are primarily related to body language and comfort level when giving a presentation. Skills such as these can typically only be improved through practice. Therefore, we will explore more opportunities within the undergraduate program for students to give presentations in order to develop these skills.

**6. Student Learning Outcome 3.** Works effectively independently as well as in a team setting.

**A. Assessment Measure 3.**

- FDSC 431V: Internship in Food Science
- Observation of student performance by the supervisor of an industrial internship. The supervisor reports their observation by means of a questionnaire which is completed at the end of the internship.
- This measure is direct.
- The primary instructor for the course is Jamie Baum; however, the assessment is based on supervisor feedback.
- Assessment measure tool (**Appendix 4**)

**B. Acceptable and Ideal Targets** (not required for indirect measures).

- The acceptable target is to have less than 25% of students in the Novice or Intermediate categories, with more than 20% in the Expert category. The ideal target is to have no student in the Novice or Intermediate categories, with more than 30% in the Expert category.

**C. Summary of Findings. (n = 24)**

	Novice	Intermediate	Advanced	Expert
Strongly motivated and takes initiative	0	1	6	17
Reliably and efficiently completes independent projects in a timely manner	0	0	1	23
Exhibits effective problem-solving skills	0	2	12	10
Performs duties and interacts well with others in a professional manner	0	0	1	23
Works effectively in a team	0	3	9	12

- Student performance greatly exceeded the prescribed criteria for the acceptable target, but did not reach the ideal target of >30% expert level in 3 out of 5 subcategories.
- These results are consistent with previous assessment years and indicate our undergraduate students are meeting or exceeding the program expectations.
- Based on this, the data are indicative of an undergraduate program in FDSC that prepares students to effectively work in teams.

**D. Recommendations** (not required for indirect measures)

- Although the acceptable criteria set forth by the department was achieved, a couple of students were rated at the intermediate levels. This means that these students exhibited strong motivation and strong problem-solving skills only *sometimes*. This is probably not an acceptable outcome for the view point of an employer. In reviewing the rubric provided to the supervisor, the assessment committee is fine tuning the data collection instrument to better assess proficiencies. Supervisor assessment of student competencies have remained confidential. When unsatisfactory ratings are given by the supervisor in the future, the department will request that the supervisor meet with the intern to discuss the shortcomings of the evaluation.
- In addition, to those students in the intermediate level for some subcategories, there were 3 subcategories where the ideal target of >30% in expert level was not met. These included strong motivation and initiative, problem-solving, and working effectively in a team.

**6. Overall Recommendations**

- While all of the acceptable targets were met for each Learning Outcome assessed within our undergraduate, there is always room for improvement especially if we are striving to reach our ideal target of more than 30% of students in the expert level of each subcategory.
- It seems that working in teams, presentation confidence, and professionalism in the work place are the most critical skills where improvement can be obtained through better guidance and advising and more opportunities to develop those skills in core FDSC courses.

**7. Action Plan**

- As outlined in the beginning of this document, one major piece of our plan will be to submit for program approval from IFT and being assessing based on their new Standards and Learning Outcomes (**Appendix 1**).
- Next, to improve student proficiencies in working in teams, presentation confidence, and professionalism in the work place, the following will be pursued:
  - We will look for ways in our current undergraduate curriculum to engage students in more team work activities prior to obtaining an internship.
  - We will look for ways in our current undergraduate curriculum to allow students more opportunities to practice presentations on technical materials.
  - The internship committee and instructor will meet with students individually prior to beginning the internship to stress the important of professionalism in the workplace. We will also reach out to companies providing internships and request that they provide information on what their expectations are with respect to the workplace and if those can be shared with students.

**8. Supporting Attachments**

- Appendices 1, 2, 3, and 4