Assessment Plan: Nutrition Science BS, Nutrition Science Sports Emphasis, Nutrition Science Pre-Health Emphasis

The Nutrition Science Program within the Department of Nutrition, Dietetics, and Food Sciences (NDFS) uses the following self-assessment process and resulting decisions to improve the Nutrition Science program is based on data generated by the following methods.

Student Evaluations

The standardized USU IDEA course evaluation form is provided to all students in all courses taught by Nutrition faculty to allow the students an opportunity to evaluate both the course and the instructor. Nutrition faculty are encouraged to map course objectives to the IDEA survey. Nutrition Science courses have historically been highly rated for instructor effectiveness and contributed towards NDFS receiving the College of Agriculture and Applied Sciences teaching award multiple times in the last 5 years.

Yearly Focus Group for Graduating Students

- Input from students to help make data based decisions for the program
- Student assessment of our program is vital and offers a unique perspective
- Student input has guided curriculum changes to increase the overall effectiveness of the program

The discussions (Appendix 1) with our outgoing undergraduates have been vital in making sure we are meeting the needs of students, shaping our curriculum, and giving our future alumni a stake in the program. These discussions have led to data-based curriculum decisions including: more faculty engagement with freshman and sophomores through changes to the curriculum and formation of the Nutrition Science Club.

Nutrition Science Overall Course Map

- Creation of a master document (Appendix 2) that includes course objectives/maps for all classes included in the nutrition science degree.

- This document allows the faculty to identify deficiencies and redundancies in the curriculum.

- This information coupled with the graduating senior exit interviews, allows for data-based decisions to improve the overall program.

Assessment of Program Specific Learning Objectives

The Nutrition Science faculty has identified four primary learning objectives and subobjectives that we believe are essential for our students to master. We examined our entire curriculum and picked specific assignments from the curriculum for each objective to assess program effectiveness. We have set a benchmark of >80% of students scoring >80% on the chosen assignments. Data has been tracked and spanning a 5-year period and is summarized below.

Nutrition Science Learning Objectives

- **Objective 1**. Students will be competent in the foundational principles of Nutrition Science

- **Objective 2**. Students will develop both written and oral communication skills

- **Objective 3**. Students will learn how nutrition research is conducted and be able to determine if information sources are evidence based

- **Objective 4**. Students will understand the role of nutrition science in shaping public policy

Objective 1. Students will be competent in the foundational principles of Nutrition Science

Subobjective: Describe the digestion and metabolism of the energy nutrients (carbohydrates, lipids, protein) and non-energy nutrients (vitamins/minerals).

Assessment Data Point	Assessment Data Point	Cumulative Students	Cumulative Years of Data	Percentage of Students Achieving >80%
NDFS 5410 final exam grade	NDFS 4020 final exam grade.	452	10	82%

Subobjective: Identify the nutrients needed to maintain health and body function. Be familiar with symptoms of nutrient deficiencies and toxicities. Recognize food sources for each nutrient.

Assessment Data Point	Cumulative Students	Cumulative Years of Data	Percentage of Students Achieving >80%
NDFS 4020 final exam grade	224	5	86%

Subobjective: Determine nutrient needs and recommendations associated with different life cycle stages.

Assessment Data Point	Cumulative Students	Cumulative Years of Data	Percentage of Students Achieving >80%
NDFS 2030 exam 3 grade	404	5	86%

Subobjective: Learn appropriate techniques used to manage body weight

Assessment Data Point	Assessment Data Point	Cumulative Students	Cumulative Years of Data	Percentage of Students Achieving >80%
NDFS 4020 grade on diet debate assignment and presentation	NDFS 5320 grade on weight-management virtual nutrition counseling assignment	224	5	98%

Subobjective: Learn the role of nutrition in relation to health and the prevention of chronic disease

Assessment Data Point	Assessment Data Point	Assessment Data Point	Cumulative Students	Cumulative Years of Data	Percentage of Students Achieving >80%
NDFS 5410 final exam grade	NDFS 5210 comprehensive final exam	NDFS 5400 Midterm/Final exam grade	476	10	93%

Subobjective: Understand epidemiologic concepts of illness and disease, with a focus on nutrition-related conditions

Assessment Data Point	Cumulative Students	Cumulative Years of Data	Percentage of Students Achieving >80%
NDFS 5200 comprehensive final exam	120	5	86%

Subobjective: Understand the principles of exercise physiology as related to energy requirements and nutrient requirements during exercise

Assessment Data Point	Assessment Data Point	Cumulative Students	Cumulative Years of Data	Percentage of Students Achieving >80%
NDFS 2030 final exam grade	NDFS 5230 final exam grade	427	7	85%

Subobjective: Understand the effects of dietary supplements on health or athletic performance

Assessment Data Point	Assessment Data Point	Assessment Data Point	Cumulative Students	Cumulative Years of Data	Percentage of Students Achieving >80%
NDFS 2030 Exam 2 grade	NDFS 5210 comprehensive final exam grade	NDFS 5230 Grade on dietary supplement fact sheet	663	12	91%

Subobjective: Learn appropriate methods of dietary assessment

Assessment Data Point	Assessment Data Point	Assessment Data Point	Cumulative Students	Cumulative Years of Data	Percentage of Students Achieving >80%
NDFS 5200 perform 24-hr recalls and FFQs with online software	NDFS 5230 grade on virtual nutrition counseling assignment	NDFS 1020 Grade on 3-day diet analysis assignment	1806	12	73%

Objective 2. Students will develop both written and oral communication skills

Subobjective: Effectively communicate nutrition research findings to both the academic community and the lay public

Assessment Data Point	Assessment Data Point	Cumulative Students	Cumulative Years of Data	Percentage of Students Achieving >80%
NDFS 5210 letter to Congressional rep. or Senator on nutrition policy issue	NDFS 5230 write and present evidence-based Fact Sheets, the best of which are reviewed and published through Extension.	305	7	98%

Subobjective: Students will be able summarize and communicate scientific literature as written scientific reviews or reports to non-scientists

Assessment Data Point	Assessment Data Point	Assessment Data Point	Cumulative Students	Cumulative Years of Data	Percentage of Students Achieving >80%
NDFS 5410 term paper grade	NDFS 5200 research paper grade with critical review of evidence on diet-health topic	NDFS 5230 grade on proposal assignment	539	15	94%

Subobjective: Students will be able summarize and communicate scientific literature as oral presentations to scientists or non-scientists

Assessment Data Point	Assessment Data Point	Assessment Data Point	Cumulative Students	Cumulative Years of Data	Percentage of Students Achieving >80%
NDFS 5410 oral presentation assignment grade	NDFS 5210 In-class nutrition policy debate grade	NDFS 5400 Oral presentation grade	611	15	96%

Objective 3. Students will learn how nutrition research is conducted and be able to determine if information sources are evidence based

Subobjective: Differentiate between credible, science-based sources of nutrition information and unreliable sources.

Assessment Data Point	Assessment Data Point	Cumulative Students	Cumulative Years of Data	Percentage of Students Achieving >80%
NDFS 5210 comprehensive final exam grade	NDFS 5230 grade on headline vs. scientific paper assignment.	371	10	93%

Subobjective: Understand nutrition science research: experimental design, ethics, dissemination of results, and communicating results.

Assessment Data Point	Assessment Data Point	Cumulative Students	Cumulative Years of Data	Percentage of Students Achieving >80%
NDFS 5200 CITI ethics certification; quizes and exams on study design, analyses, and causal inference	NDFS 5310 grade on submitted clinical/pre-clinical research protocol	148	8	89%

Subobjective: Evaluate food quality based on food labeling, nutrition labeling, food safety practices, and the scientific literature

Assessment Data Point	Cumulative Students	Cumulative Years of Data	Percentage of Students Achieving >80%
NDFS 4020 Grade on Sugar Sweet Hot Topic assignment	224	5	98%

Objective 4. Students will understand the role of nutrition science in shaping public policy

Subobjective: Describe the role of nutrition in public health

Assessment Data Point	Cumulative Students	Cumulative Years of Data	Percentage of Students Achieving >80%
NDFS 5200 comprehensive final exam grade	120	5	86%

Subobjective: Learn the impact of biological, socioeconomic, cultural, and psychological factors on eating behavior

Assessment Data Point	Cumulative Students	Cumulative Years of Data	Percentage of Students Achieving >80%
NDFS 5200 comprehensive final exam grade	120	5	86%

Subobjective: Understand what constitutes a sustainable food system and understand the effects of food policy and production on consumers

Assessment Data Point	Cumulative Students	Cumulative Years of Data	Percentage of Students Achieving >80%
NDFS 5200 comprehensive final exam grade	120	5	86%

Faculty Program Assessment

Assessment information from these sources is discussed and reviewed by Nutrition Science faculty and used to improve and modernize program objectives, course content and degree requirements. The single most important department activity for reviewing assessment as well as all other aspects of the program is the yearly faculty retreat. This meeting provides a period of reflection on the past year; an opportunity to make changes and/or modifications to requirements, policies and procedures; and a forum for planning the coming academic year. Some recent data-based decisions are summarized below.

Recent Data-based Decisions

Initiative 1. Modifying the Nutrition Science curriculum to integrate with Dietetics

In coordination with Dietetics and the NDFS student advisor, we have modified the first 2 years of curriculum to be interchangeable with the Dietetics: Didactic Emphasis BS. This decision was based on student input and allows students to change programs after 2 years with minimal disruption to their 4-year course plan. This is a net benefit for both Nutrition and Dietetics students as it allows additional flexibility in pursuing their career goals. Moreover, in response to program review and student feedback, we have continued to streamline the curriculum to increase NDFS coursework in the first three years of the program and eliminate bottlenecks that hinder retention and increase time until graduation.

Initiative 2. Modifying the Nutrition Science curriculum to integrate with regional campuses

As part of the curriculum changes to the first two years of the Nutrition Science curriculum, we are working with USU Eastern on a 2+2 program. This program will allow students to attend USU Eastern for two years and seamlessly transfer to USU Logan for the final two years of the program. We anticipate that this plan will also work with other regional campuses and will increase student recruitment.

Data Based Discussions for 2022

At the Spring 2022 faculty retreat the Nutrition Science faculty will review the assessment data and the following agenda items will be discussed:

- The benchmark for Objective 1, subobjective: *Learn appropriate methods of dietary assessment* is not currently being met. Does the program need to add additional content/assignments to meet this objective?

- Objective 4 (*students will understand the role of nutrition science in shaping public policy*) is one of the four major program objectives, however, there are fewer related assignments to this objective relative to the other three objectives. Are curriculum changes needed to increase emphasis in this area?

- Discussion and review of the graduating student focus group data.

- Review of and update of the learning objectives data.

Appendix 1

Nutrition Science 2021 Exit Survey

1) What are your plans after graduation?

2) Was there any material/topic that you felt was too repetitive in the curriculum?

3) Was there any material/topic that you felt was not covered adequately?

4) What did you like best about the program?

5) What did you like least about the program?

6) Are there any courses that could be developed to enhance the program?

7) We would like to keep in touch with you all in the future, would it be ok for us to contact you regarding your professional development? If so could you provide a long-term email address (I promise we will not use this to send you spam).

Appendix 2

		NDFS 1020 Blended	NDFS 2030 online	NDFS 4020 Traditional	NDFS 5200 Traditional	NDFS 5210 Traditional	NDFS 5230 Traditional	NDFS 5310 Traditional	NDFS 5320 Online	NDFS 5400 Traditonal	NDFS 5410 Traditonal	NDFS 5520 Traditonal	NDFS 5600 Traditional
Overarching goal	**The curriculum will include the foundational principles of Nutrition Science**												
specific goals	Describe the digestion and metabolism of the energy nutrients(carbohydrates, lipid	2	2	4	2	2	1	1	1	3	3	2	3
	Identify the nutrients needed to maintain health and body function. Be familiar wit	2	3	3	2	2	1	1	1	3	3	3	3
	Determine nutrient needs and recommendations associated with different life cycl	2	3	3	1	2	1	1	1	2	2	2	2
	Learn appropriate techniques used to manage body weight	2	3	4	1	1	1	1	4	2	2	2	3
	Learn the role of nutrition in relation to health and the prevention of chronic diseas	2	1	3	4	4	1	1	1	4	4	3	4
	Understand epidemiologic concepts of illness and disease, with a focus on nutrition	2	1	2	4	3	1	1	1	2	2	2	2
	Understand the principles of exercise physiology as related to energy requirements	2	4	1	1	1	1	1	4	1	1	1	1
	Understand the effects of dietary supplements on health or athletic performance	2	4	2	2	2	1	1	4	3	3	2	3
	Learn appropriate methods of dietary assessment.	3	1	3	2	2	1	1	3	2	1	4	3
Overarching goal	**Students will develop both written and oral communication skills**	1	1	2	4	3	4	2	4	3	4	3	3
specific goals	Effectively communicate nutrition research findings to both the academic commun	1	1	4	2	3	4	1	4	3	3	3	4
	Students will be able summarize and communicate scientific literature as written sc	1	1	4	2	3	4	1	4	3	4	4	2
	Students will be able summarize and communicate scientific literature as oral prese	1	1	2	2	3	4	1	1	4	4	4	4
	Learn how to effectively debate Nutrition Science issues	1	1	2	1	4	4	1	1	1	1	1	1
Overarching goal	**Students will learn how nutrition research is conducted and be able to determine**	2	2	4	3	3	4	4	4	3	4	3	3
specific goals	Differentiate between credible, science-based sources of nutrition information and	2	2	2	4	4	4	2	4	3	3	3	4
	Understand nutrition science research: experimental design, ethics, dissemination	2	2	3	4	4	4	4	4	2	2	2	3
	Evaluate food quality based on food labeling, nutrition labeling, food safety practic	2	2	3	1	2	1	1	2	1	1	4	1
Overarching goal	**The curriculum will reflect the role of nutrition science in shaping public policy**	2	1	3	4	4	1	1	1	2	2	4	3
specific goals	Describe the role of nutrition in public health	2	1	2	4	4	1	1	1	2	2	2	2
	Learn the impact of biological, socioeconomic, cultural, and psychological factors o	2	1	2	3	4	1	1	3	2	2	1	3
	Understand what constitutes a sustainable food system and understand the effects	2	1	2	3	4	1	1	1	1	1	4	1

Key

1 Not applicable
2 covered but superficially
3 covered
4 in depth coverage