Cover/Signature Page – Program Review Template

Institution Submitting Review: *Utah State University*
Program Title: *Nutrition Science*
School or Division or Location: *College of Agriculture and Applied Sciences*
Department(s) or Area(s) Location: *Department of Nutrition, Dietetics, and Food Sciences*
Institutional Board of Trustees' Approval Date: *MM/DD/YEAR*

Review Type (check one):

Regents' General Consent Calendar Items		
R411 Cyclical Institutional Program Reviews		
SECTION NO.		**ITEM**
4.4	☐	Programs with Specialized Accreditation
5.1	☐	Seven-Year Program Review
5.2	☐	Five-Year Program Review

Chief Academic Officer (or Designee) Signature:
I certify that all required institutional approvals have been obtained prior to submitting this review to the Office of the Commissioner.

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Signature **Date:** *MM/DD/YEAR*

Printed Name: *Name of CAO or Designee*

Five- or Seven-Year Program Review
Higher Education Institution
Program
8/28/2019

Data Form:

R411 Data Table					
Department or Unit—Nutrition, Dietetics and Food Sciences					
	Year	Year	Year	Year	Year
	2013-14	2014-15	2015-16	2016-17	2017-18
Faculty					
Headcount	21	22	22	22	24
With Doctoral Degrees (Including MFA and other terminal degrees, as specified by the institution)	14	16	16	16	18
Full-time Tenured	12	14	13	12	15
Full-time Non-Tenured	2	2	2	4	3
Part-time	0	0	0	0	0
With Master's Degrees	5	4	6	6	6
Full-time Tenured	2	2	2	2	2
Full-time Non-Tenured	3	2	4	3	4
Part-time	0	0	0	0	0
With Bachelor's Degrees	0	0	0	0	0
Full-time Tenured	0	0	0	0	0
Full-time Non-Tenured	0	0	0	0	0
Part-time	0	0	0	0	0
Other	2	0	0	0	0
Full-time Tenured	0	0	0	0	0
Full-time Non-Tenured	2	0	0	0	0
Part-time	0	0	0	0	0
Total Headcount Faculty	22	22	22	22	24
Full-time Tenured	16	16	15	14	17
Full-time Non-Tenured	5	6	7	8	7
Part-time	0	0	0	0	0

FTE (A-1/S-11/Cost Study Definition)					
Full-time (Salaried)	14.87	15.26	17.42	17.35	16.68
Teaching Assistants	0	0	0	0	0
Part-time (May include TAs)	0.91	1.32	0.55	0.12	0.02
Total Faculty FTE	15.78	16.58	17.97	17.47	16.7
Number of Graduates					
Certificates					
Associate Degrees					
Bachelor's Degrees	63	40	46	51	41
Master's Degrees	19	20	24	33	28
Doctoral Degrees	1	4	4	3	5
Number of Students—(Data Based on Fall Third Week)					
Total # of Declared Majors	372	376	435	391	368
Total Department FTE*	352.9	350.3	378.1	378.1	421.1
Total Department SCH*	4804	4742	5149	5149	5769
*Per Department Designator Prefix					
Student FTE per Total Faculty FTE	22.4	21.1	21.0	21.6	25.2
Cost (Cost Study Definitions)					
Direct Instructional Expenditures	1,758,554	1,903,879	2,073,360	2,211,893	2,211,893
Cost Per Student FTE	4,893	5,435	5,484	5,850	5,763
Funding					
Appropriated Fund	1,801,176	1,757,494	1,867,802	2,025,585	1,177,323
Other:					
Special Legislative Appropriation					
Grants of Contracts					
Special Fees/Differential Tuition					
Total	1,801,176	1,757,494	1,867,802	2,025,585	1,177,323

Program Assessment:

Reviewers:

- *Mark Haub, Kansas State Universty*
- *John Finley, Louisiana State University*
- *Gretchen Peacock, Utah State University*

Program Description:

The Nutrition Science (NS) program is one of three Bachelor of Science (BS) degrees offered by the Department of Nutrition, Dietetics, and Food Sciences. A Bachelor of Science (BS) Nutrition Science degree was recently (Fall 2018) approved to replace the previous emphasis area within the BS Nutrition,

Dietetics, and Food Sciences degree. The new BS NS degree offers two optional emphasis areas in Pre-Health Professions and Sports Nutrition. Having a BS degree in NS, rather than an emphasis in NS for the broader BS degree in Nutrition, Dietetics, and Food Sciences is beneficial because it: 1) distinguished NS from the other disciplines in the department and recognizes that NS has a core curriculum different than both Food Science and Dietetics; 2) it allows for better advising and tracking of students and graduates; and 3) makes it easier for students interested in the unique training provided by our program to recognize what degree is most appropriate for them.

The nutrition science program is designed for students who are interested in studying the molecular and cellular aspects of how nutrition relates to human health and disease. This degree prepares students for employment in the food and supplement industries, government or private agencies in the area of nutrition and health, research laboratories, or for advanced degree programs in nutrition or related fields.

Faculty

There are 6 core faculty who are identified as being part of the NS program, and a total of 31 faculty in the NDFS department. These core faculty are all well-qualified and are both strong teachers and strong researchers. In addition, student feedback suggests that faculty are meeting student needs by being available, knowledgeable, and personable.

Courses and Curriculum

The current NS curriculum is designed to provide students a strong background in nutrition science via specific courses in this area. Additionally, the NS program is well-suited to provide a strong science background that is directly relevant for those students who will be applying to medical school and other health care profession areas (physical or occupational therapy and physician assistant). Although there is some wisdom in the current approach, we believe it would be beneficial for students to have increased flexibility in terms of non-NS classes, and that it would benefit students to have more NS specific courses. Currently, NS majors are required to take 26 credits of NS courses. Five of the required courses are at the 5000-level and are cross-listed undergraduate / graduate courses. The number of required NS credits is lower than some other programs at peer institutions (see Table 1 for comparison information) with a higher percentage of courses being cross-listed with graduate courses. Based on comparisons, it seems other programs share content delivery with their colleagues in dietetics programs, which is an efficient means of content delivery for the university. The NS faculty appear to do this for the dietetics program(s) and it is collaborative to share instructional opportunities. For example, several NS programs require Life Cycle/Span Nutrition, which is required in the Utah State Dietetics Emphasis program. Increasing the number of undergraduate-specific courses will enhance academic diversity and variety to assist with recruitment and retention of students; and, potentially generate more revenue for the unit. Specific recommendations we have in this area are as follows:

- Increase number of NS major courses; particularly those at the 2000 and 3000 levels
- Explore the need for the extensive number of chemistry courses and consider reducing the number of required chemistry courses
- Explore reducing the required Math courses – perhaps only requiring college algebra. Also consider an introductory statistics class as the QI requirement.
- Consider allowing students to have a minor (e.g., maybe Biology would be an appropriate minor for pre-health students)
- One options might be to have ‘sub-plans’ for pre-med versus plans for those entering the workforce after the BS degree (e.g., Extension agent, Health Worker/Navigator, WIC employee).

Reducing required chemistry and math courses will open opportunities for more nutrition related classes particularly for nutrition and sports nutrition options. Pre-professional students will likely still need to continue with conventional chemistry etc. to meet medical / health professional school requirements.

Increasing the number of NS specific courses will likely require more instructors and/or more sharing of courses across the department. Suggestions include:

- Sharing more classes with the dietetics program in terms of having NS students in dietetics courses (or courses taught by faculty affiliated with the dietetics program). Currently NS faculty have dietetics students in their classes but there appears to be fewer dietetics courses open to NS students. Overall. we believe there is merit in working to integrate across programs in departments where possible rather than having separate (but similar) classes for each major
- Explore ways to hire more nutrition instructors. One recommended option is to hire a lecturer who could teach a 4-4 load focused on undergraduate courses (perhaps split across the NS program and other areas is NDFS). Given that so many of the faculty in the NS program are on research role statements with lower teaching loads, it will be difficult for current faculty to meet all of the teaching needs of the program while still meeting the research mission of the department and college.

Overall, we believe that encouraging more flexibility in education opportunities will be helpful for the NS majors – especially those with career paths other than health profession areas. In addition, it is important to focus on skills such as communication skills, leadership and teamwork in the of training students.

In addition to some modifications to the curriculum, an increased focus on undergraduate research would be beneficial to NS majors. Students expressed interest in engaging in research and some frustration that it was challenging to find opportunities for research. Faculty are encouraged to invite undergraduate students to be part of their research teams, support students in applying for URCO grants, and explore having a larger cohort of honors students. There seemed to be a disconnect in the communication, as faculty expressed that communication was provided, while students who were interested did not seem to receive the communication at a time they could participate.

The department may want to consider whether offering a NS minor would be beneficial to the program and department. It seems likely a NS minor would be popular with other disciplines across campus.

<u>Student Recruitment</u>

Student numbers in the NS major are low and while we understand numbers may increase this year, we believe the program should consider ways to better market their program and recruit new majors. That being said, we also believe the program should work with the department head and dean to identify the optimal size of the program and then use strategies, as needed, to reach this target size.

A major issue identified is that most incoming USU students do not know the NS major (or NDFS) exists and have no concept of the opportunities the program represents.

Suggestions for recruitment into major include:

- Be more proactive in recruiting / identifying majors
    - Use social media - identify students with social media skills, build a website and have students manage it for credit

    - Utilize social media and regional TV and newspapers to announce breakthrough research, extramural funding and recent publications
    - Connect with regional science and food editors
- Make illustrations on recruitment brochures more relevant and target recruitment materials more. For example, use an athlete for the sports nutrition emphasis; use a picture of medical personnel for the pre-professional emphasis area.
- Explore participation in FFA and 4-H. Does university extension have tools to reach out to high school or incoming freshman?
- Utilize and emphasize being the sole pre-health program in the college
    - Focus on Nutrition as relevant major for a variety of pre-health fields
    - Offer seminars or orientation sessions for incoming freshman
    - Work with junior colleges in region to recruit and facilitate transfer to USU. This could include suggested courses that could be taught at junior college with assured credit transfer

Alumni, Community, and Student Relations

There are limited scholarship opportunities for students. Reaching out to alumni and engaging in networking may help expand these opportunities.

To promote cohesive student groups (and perhaps more engaged alumni), a student Nutrition club may be considered. The club could engage in community outreach and service in addition to more academic activities.

Consider nutrition seminars and retreats for physicians and health professionals. Leverage Logan ski resorts and summer sports a public service activity. This could be a good service (physicians need more nutrition education) and a revenue source

A recommendation would be to require students take a selection of NDFS classes. This increases variety, which was requested by students, and it generates programmatic SCH – which might be of value to the department and college. If some general education requirements are decreased, there would not necessarily be an increased number of required courses. To serve as an excellent pre-health or pre-medicine program, the flexibility with electives is paramount. Most other NS programs nationally are structured to train excellent and well-prepared students for entry into health care professional programs – especially dentistry, medicine, optometry, and physician assistant programs.

Institution's Response:

Courses and Curriculum

We agree with recommendation to increase the number of major courses available to our students especially at the 2000 and 3000 level, and in general make available a selection of courses that add flexibility of electives within the major. To this end, when new curriculum is developed in the future, we will prioritize the creation of 2000-3000 level classes over upper level classes. The current situation and limiting factors are that nutrition science faculty already carry full teaching loads and the first and second years of our current curriculum are largely filled with math and biology/chemistry courses that fulfill prerequisites for other courses in our curriculum or that are often required for medical school. To address the first limiting factor, the review committee suggested that courses currently taught be faculty in the dietetics program,

should be made available to nutrition science students. We agree with this recommendation, and we will work with the administration to make available to nutrition science students such current dietetics-only courses as Nutrition Assessment (NDFS 4550), Maternal and Child Nutrition (NDFS 4790), and Education and Counseling Methods in Dietetics 1 and 2 (NDFS 4050, 4060), and Medical Nutrition Therapy 1 and 2 (NDFS 4550, 4560). We believe there is great opportunity to dissolve silos currently separating dietetics and nutrition science and thereby adding vitality to both programs. This will be part of the discussion and planning as the department revamps its dietetics programs over the next few years to meet new licensing requirements for registered dietitians.

To make room for additional flexibility in our nutrition science programs, we have already begun employing a variety of course analytics looking at the need and role of prerequisite courses, especially in math, physics, and chemistry. For example, if we remove the requirement for NS students to take Trigonometry and Calculus, we free up 5 credit hours for students to take major courses during their freshmen and sophomore years. The recommendation to increase flexibility by decreasing general education credits will be difficult because general education requirements are established by the university and have been carefully considered in developing our curricula.

We have previously considered offering a nutrition science minor, however our faculty did not support this idea based on the premise that there are already enough people with marginal qualifications claiming nutritional expertise. Overall, faculty support a dual major philosophy of nutrition science with biology, exercise physiology, or other complimentary allied health degrees. An additional point to consider is that requiring our students to have another minor, would likely only add to the prerequisites and that the review committee indicated we should scrutinize as really necessary. Nutrition science students sometimes currently earn minors in related programs such as chemistry.

Recruitment into Major

While student numbers in the nutrition science program were identified as low, the numbers largely saturate the teaching resources held within the program and many of the nutrition science courses invariably fill to capacity. Still, targeted recruitment into nutrition science was a major driving force for the recent separation of bachelor degrees in the department thereby allowing emphasis areas under nutrition science including Pre-Health and Sports Nutrition. We have already developed targeted advertising for those programs and are currently working with the College of Agriculture and Applied Science's (CAAS) marketing team, as well as the College ambassadors and our program advisor Ms. Launa Julander to work on ways to increase the visibility of our program to current and prospective students

Alumni, Community and Student Relations

We appreciate the reviewers' comments regarding alumni and community relations and recognize that strengthening these relations will increase the visibility of our program. Given our limited resources our immediate effort in this respect will be to consider starting a Nutrition Science club. This effort will be led by our students, and faculty will actively engage with students of this club to foster networking opportunities with alumni and community. We anticipate that many of our students will be interested in organizing leadership and outreach activities including hosting nutrition seminars and retreats for health/medical professionals.

General Recommendation

The committee's review clearly identified a need for our curriculum to include additional core Nutrition Science courses and provide for more flexibility in our curriculum. We agree with the reviewers that an

efficient way to address this would be to increase the integration of the department's nutrition science and dietetics programs. There is great opportunity to achieve this as our dietetics program is in the midst of transitions as they respond to the changes in the requirements of dietetics professionals to occur in the near future. In particular, the department will be dropping the Coordinated Program while maintaining and expanding the Didactic Program. Our planning for this transition will consider how the department's current curricula and specific course offerings can be shared across both nutrition science and dietetics. In addition, we will work to make our program more visible to prospective and current students in the ways previously discussed.