

Attachment 2 (a)

Kingdom of Saudi Arabia

The National Commission for Academic Accreditation & Assessment

**Program Specifications
(PS)**

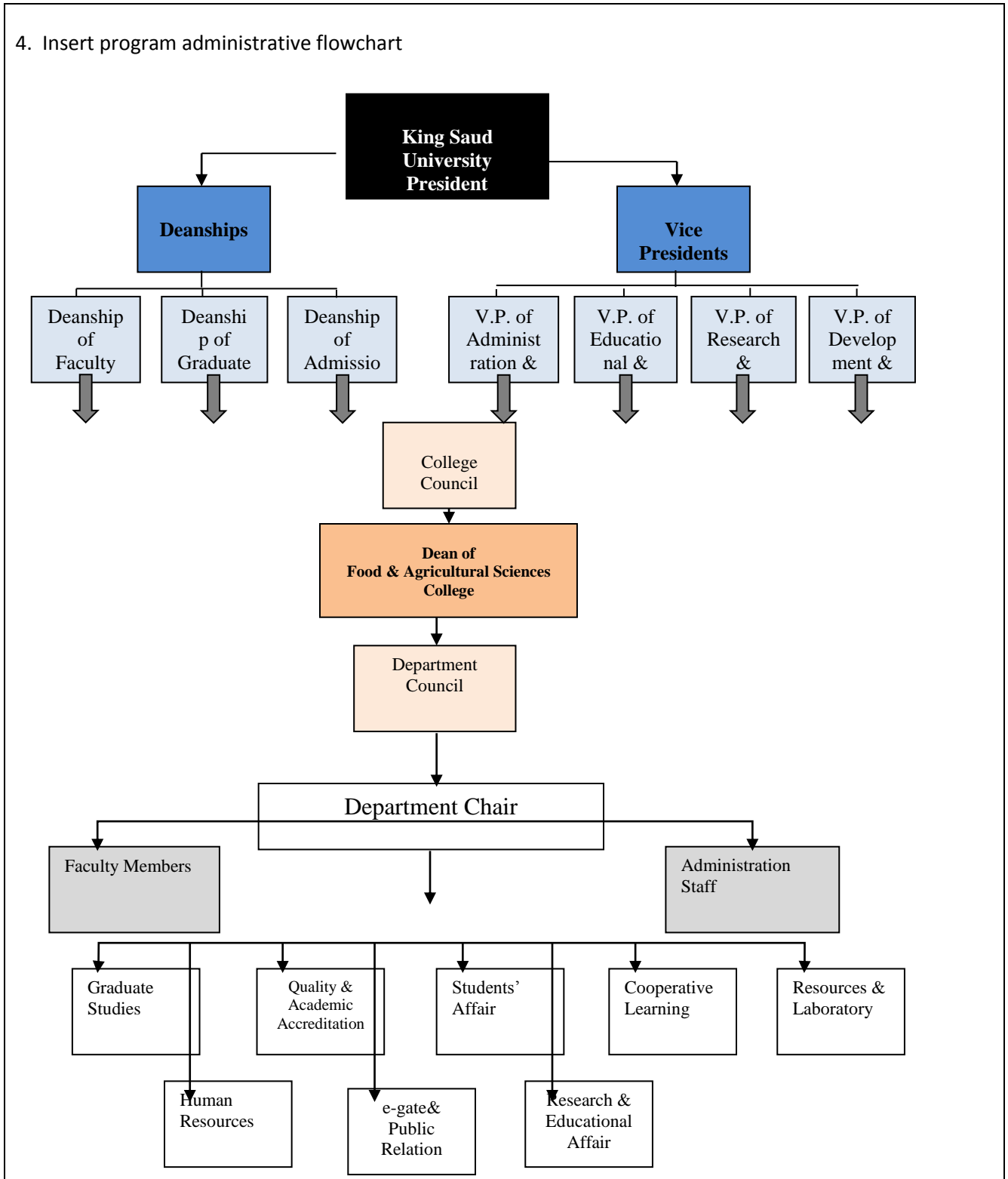
National Commission for Academic Accreditation & Assessment

Program Specifications

For guidance on the completion of this template, please refer to NCAAAA guidebooks.

1. Institution: KING SAUD UNIVERSITY	Date of Report 21/5/2014
2. College/Department: College of Food and Agriculture Sciences / Food Science and Nutrition Department	
3. Dean: Dr. Fahad N. A-Barakah	

4. Insert program administrative flowchart



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A. Program Identification and General Information

1. Program title and code: Food Science and Human Nutrition (FSN)
2. Total credit hours needed for completion of the program: 135 credits
3. Award granted on completion of the program: Bachelor of Agricultural Sciences / Food Science and Human Nutrition
4. Major tracks/pathways or specializations within the program (eg. transportation or structural engineering within a civil engineering program or counselling or school psychology within a psychology program) <ul style="list-style-type: none">• Food Science• Human Nutrition
5. Intermediate Exit Points and Awards (if any) (eg. associate degree within a bachelor degree program) NA
6. Professional occupations (licensed occupations, if any) for which graduates are prepared. (If there is an early exit point from the program (eg. diploma or associate degree) include professions or occupations at each exit point) Food Scientist and Human Nutritionist
7. (a) New Program <input type="checkbox"/> Planned starting date <input type="text"/>
(b) Continuing Program <input checked="" type="checkbox"/>
Year of most recent major program review <input type="text" value="2012"/>
Organization involved in recent major review (eg. internal within the institution, Accreditation review by ? Other_AIC_2010

8. Name of program coordinator or chair. If a program coordinator or chair has been appointed for the female section as well as the male section, include names of both. <ul style="list-style-type: none">• Dr.Fahad AL-Juhaimi: Department chair for the program• Dr.Nawal AL-Badar: Coordinator of the female section		
9. Date of approval by the authorized body (MoHE for private institutions and Council of Higher Education for public institutions).		
Campus Branch/Location	Approval By	Date
Main Campus:		
1: Diriyah Campus	Ministry of Higher Education	1965
2:		
3:		
4:		

B. Program Context

1. Explain why the program was established.

a. Summarize economic reasons, social or cultural reasons, technological developments, national policy developments or other reasons.

In terms of quality and availability, the program introduced new ways and experience in food processing and preservation for specific products such as fresh dates, where dates technology is developing methods to extend fresh date's season to meet consumer's demands. In the area of nutrition, the program is directed to meet the nutritional needs of the community such as the participation of the graduates in hospitals as team members. The fast growth on the number of hospitals in the kingdom is another good reason for the expansion and development of the nutrition program. The program is direct support of the government socio-economical plans.

Growing needs for food scientists and nutrition specialists in public such as Saudi Food and Drug Administration or Hospitals and private sector (Food Industry). The rapid demand for food security, quality, and availability, necessitated the adaption of more market oriented food science and nutrition program. The growth of the food industry in the Kingdom played a vital role in shaping the program, as well. The food industry in Saudi Arabia grew to 871 companies that employ over 58,000 workers. These companies include dairy, dates, bakery, meat, snake foods, packaging, and others. The changing life style of the population demanded new ways of food service such as ready to eat meals.

b. Explain the relevance of the program to the mission and goals of the institution.

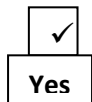
The mission and objectives of the program and those of the King Saud University (KSU) are identical, relevant, and aimed at competitive academic programs and community services to graduate qualified professionals and future leaders. In June 2009 and in its continuous search for excellence, KSU embarked in an ambitious project by redefining its future strategic directions. This has resulted in a new 2030 vision and mission as well as key strategic objectives included in the new Strategic Plan for the University. The new vision of KSU is : *"To be a world-class university and a leader in building the knowledge-based society"* and the new mission is: ***"To provide distinctive education, produce creative research, serve the society and contribute in building the knowledge-based economy and community through learning, a creative thinking environment, an optimal use of technology, and effective local and international partnerships"***.

In that regard, KSU established new deanships: Deanship of Quality, Deanship of Skills Development, and the Deanship of E-Transactions and Communications: FSN faculty members participate in a number of workshops meant to certify faculty members in the KSU

Quality management System (QMS). The department has established its quality committee of 5 members and started implementing KSU QMS. Faculty members at FSN participated in the training sessions offered by the deanship in the areas of teaching skills, use of technology, and others means. The department benefited from E-learning in its communication within the department and throughout the university such as students registration and course offered every semester. KSU has embarked on several vigorous initiatives to improve its academic performance, scholarship and research outcomes such as research chairs' program, several specialized research institutes and centres of excellence, International Twinning Program, and an ambitious excellence rewarding system, which includes various awards on academic scholarship and research achievements. Some impacts of such vigorous improvement initiatives have already been felt university-wide and have resulted in a significant improvement of the international standing where KSU is currently ahead of all Saudi, Gulf and Arab universities in three major academic rankings, namely Webometrics, QS Time, and Shanghai Jiatong. The FSN participated in the outcome of these programs by receiving financial support for more than 6 projects supported by King Abdelaziz City for Science and Technology (KACST) (about 12 million SAR and two visiting international scientists. Noting the documented results from various professional tests, KSU graduates are currently rated the best across the Kingdom. Furthermore, KSU graduates constitute the highest rate among Saudi universities with respect to admission and degree completion at international leading universities as part of the King Abdullah Scholarship Program. The KSU Teaching Assistants studying abroad for Master and Ph.D. degrees have been noted for their outstanding performance and competitive status. The FSN department continuously sending teaching assistants for higher degrees fully financed by the Ministry of Higher Education. Many of these graduates are returning to constitute a highly skillful workforce at the University. FSN faculty members are consultant to the Saudi Food & Drug association, Consumer Protection Agency, and other public sector agencies. The department established schools visit program where high school students are invited to the department to get some information regarding the department and the subsequent career opportunity for its graduates. Students are also invited to see labs and some pilot machines available in the department, and provide them with information on some food products. These activities are unfortunately not recorded in the department, because they are frequent, continuous, especially from those schools close to the university.

2. Relationship (if any) to other programs offered by the institution/college/department.

a. Does this program offers courses that students in other programs are required to take?



If yes, what has been done to make sure those courses meet the needs of students in the other programs?

The FSN department is offering courses that are mandated by other departments and vise-versa. The department participates in planning the courses via discussion with other departments. These types of courses are reviewed at the end of each semester and student survey is conducted and data analyzed and discussed in a review meeting. Courses are improved in light of the data and discussion between departments of interest where pressing issues are accommodated.

3. Do students who are likely to be enrolled in the program have any special needs or characteristics? (eg. Part time evening students, physical and academic disabilities, limited IT or language skills).

Yes No

4. What modifications or services are you providing for special needs applicants?

Most of the services offered to members with special needs are limited to physical support in how to get in and out of the departments' facilities and how to fulfill their needs while in the building such as:

- There are elevators in the building and easy entrance
- All classrooms are equipped with audio and visual aids
- Toilets have facilities for disabled persons

C. Mission, Goals and Objectives

1. Program Mission Statement (insert)

The vision of the Department of Food Science and Human Nutrition is to ***"achieve excellence in teaching and learning, scientific research and community service in the areas of food and human nutrition"***.

The mission of the Department of Food Science and Nutrition ***"is to effectively contribute to the development of the areas of food and human nutrition. In Addition, the department is focused on community service through human resources qualification, creating an environment of excellence in scientific research, deepening the knowledge and dissemination of food and nutrition awareness, as well as providing advisory services and exchange of experiences with partners"***.

2. List goals and objectives of the program within to help achieve the mission. For each goal and objective describe the major strategies to be followed and list the indicators that are used to measure achievement.

Goals and Objectives	Major Strategies	Measurable Indicators
<p>1. To prepare food scientists and nutritionists who possess knowledge, skills and determination that will make certain that they are proficient to perform their duties safely and effectively.</p> <p>Objectives of goal 1:</p> <ol style="list-style-type: none"> 1. Recruit high achieving students to the program 2. Provide undergraduate, graduate, and professional curricula and programs that enhance disciplinary knowledge and analytical, creative thinking, and leadership skills 3. Enhance existing research programs and develop new research initiatives by 4. Coordinate, support, and target additional resources to maintain and enhance areas of research excellence and contribute to local and regional economic development 5. Increase outreach and engagement activities and public knowledge and support of the Department of Animal and Food Sciences 	<p><i>Major strategies are focused on providing knowledge, recruit high achieving students, support knowledge based economy, and community service which can be detailed as follows:</i></p> <ol style="list-style-type: none"> 1. Program strategic plan is the general and specific knowledge, skills, attitudes, and abilities that students of the program will be able to demonstrate by the time they finish required coursework and internship. 2. This strategy identifies the distinguishing elements of the program that will promote the recruitment of the most qualified students and target the markets most responsive to our message. 3. FSN department will move to support knowledge based economy by designing food science courses designated to serve the local economy of the Kingdom. 4. The program will direct its effort to address food related issues directly related to the country such as food security. 5. The program will focus on diversifying sources of funding for research development and increase the profitability of the 	<ol style="list-style-type: none"> 1. Students overall evaluation of the quality of their learning experiences at the institution. (Average rating of the overall quality of the program on a five point scale in an annual survey of final year) 2. Proportion of courses in which student evaluations were conducted during the year. 3. Proportion of programs in which there was independent verification within the institution of the standards of student achievement during the year. 4. Ratio of students to teaching staff. 5. Students overall rating on the quality of their courses.

	<p>agriculture economy of the country.</p> <p>6. Regarding community service, the department plan involves educational and research needs of the food industry, food entrepreneurs, and the consuming public. Identify new and strengthen existing outreach partnerships at the department, university, national, and international levels.</p>	
<p>2. To ensure that students have appropriate scientific base for lasting learning and technical training in any topic of food science or nutrition.</p> <p>Objectives of goal 2:</p> <ol style="list-style-type: none"> 1. Our success will be judged by the ability of our graduates to perform well in their carrier or proceed for higher education. 2. Students will finish the program within the time specified by KSU (four years) 3. The program follows the curriculum recommendation of the Institute of Food Technology (IFT) of Chicago. 	<ol style="list-style-type: none"> 1. Students will learn to be able to apply and incorporate the principles of food science in practical, real-world situations and problems. 2. Be able to apply the principles of food science to control and assure the quality of food products, food safety, and statistical analysis. 3. Understand government regulations required for the manufacture and sale of food products. 4. Define a problem, identify potential causes and possible solutions, and make thought full recommendations. Apply critical thinking skills to new situations. 	<ol style="list-style-type: none"> 1. Percentage of students entering programs who successfully complete first year. 2. Proportion of students entering undergraduate programs who complete those programs in minimum time. 3. Proportion of students entering post graduate programs who complete those programs in specified time. 4. Proportion of graduates from undergraduate programs who within six months of graduation are: <ol style="list-style-type: none"> (a) employed (b)enrolled in further study (c)not seeking employment or further study

<p>3. To provide national studies related to food and human nutrition, and diversify sources of funding for the department or community service.</p> <p>Objectives of goal 3:</p> <ol style="list-style-type: none"> 1. The department encourages faculty to seek funding by submitting grand proposals to different agencies. 2. Provide suitable space for research and hire trained staff in research labs. 3. Establish safety lab procedures and strictly follow OSHA safety recommendation. 	<ol style="list-style-type: none"> 1. Faculty are consulted and participated in the decision making process in the department regarding academic and administrative issues such as self-evaluation 2. The department facilitate for faculty professional development such as computer training, providing scientific journals, and electronic library 3. The facilities of the department are sufficient, convenient, and provide support for faculty research activities 	<ol style="list-style-type: none"> 1. Number of refereed publications in the previous year per full time equivalent member of teaching staff. (Publications based on the formula in the Higher Council Bylaw excluding conference presentations) 2. Proportion of full time member of teaching staff with at least one refereed publication during the previous year. 3. Number of papers or reports presented at academic conferences during the past year per full time equivalent members of teaching staff. 4. Research income from external sources in the past year as a proportion of the number of full time teaching staff members. 5. Proportion of total operating funds spent on research.
<p>4. During the course of their study, students will learn how to develop systematic and critical thinking and problem solving skills and disseminate nutritional awareness throughout the Kingdom.</p> <p>Objectives of goal 4:</p> <ol style="list-style-type: none"> 1. A number of courses were designed to help students develop critical thinking skills 2. After internship, students 	<ol style="list-style-type: none"> 1. The program encourages critical thinking and the development of innovative skills on the student by offering relevant course content and proper training. 2. When comparing themselves with graduates from other universities, students find their knowledge and skills comparable. 3. The curriculum of the 	<ol style="list-style-type: none"> 1. Students will be asked "Does the curriculum help you in developing critical thinking skills"? 2. Proportion of courses designed for critical thinking and problem solving skills 3. Availability of the faculty for academic and social advice for students 4. Students will answer "did the internship program help you in your career"?

<p>are required to write a detailed report and present their activity in front of a team of faculty members and defend their observations over what they did and what it means.</p> <p>3. faculty members are assigned a number of students to visit them on site during their internship training and talk to their internship supervisor</p>	<p>program including the internship is designed to help students in their career.</p>	
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D. Program Structure and Organization

1. Program Description:

List the core and elective program courses offered each semester from Prep Year to graduation using the below Curriculum Study Plan Table (A separate table is required for each branch IF a given branch/location offers a different study plan).

A program or department manual should be available for students or other stakeholders and a copy of the information relating to this program should be attached to the program specification. This information should include required and elective courses, credit hour requirements and department/college and institution requirements, and details of courses to be taken in each year or semester.

Curriculum Study Plan Table

Year	Course Code	Course Title	Required or Elective	Credit Hours	College or Department
Prep Year			Required		
	ENGL 140	English Language 1		8	English language department
	MATH 140	Mathematics 1		2	Department of mathematics
	CSK 140	Communication Skills		2	
	TEC 140	Computer Skills & Information Tech.		3	College of computer science
	ENGL 150	English Language 2		8	English language department
	MATH 150	Mathematics 2 (calculus)		3	Department of mathematics
	LTS 140	Learning, Thinking and Research Skills		3	
	CHS 140	Health and Fitness		1	College of Health sciences
	ENT 101	Entrepreneurship		1	
Semester 3	202 FSN	Principles of Food Science		2 (2+0)	Food science and nutrition dept.
	101 IC	Introduction to Islamic Culture		2 (2+0)	Islamic studies department
	101 PHYS	General Physics (1)		4 (3+1)	Department of physics
	101 BCH	General Biochemistry		4 (3+1)	Department of biochemistry
	102 BOT	Botany		3 (2+1)	Department of botany
	106 STAT	Bio Statistics		2 (2+0)	Department of statistics
	205 AGECE	Principles of Agricultural Economics		3 (3+0)	Department of agri-economics
Semester 4					

	206 FSN	Principles of Human Nutrition		2 (2+0)	Food science and nutrition dept.
	316 FSN	Food Chemistry		3 (3+0)	Food science and nutrition dept.
	103 ZOO	Principles of Zoology		3 (2+1)	Department of zoology
	103 CHEM	General Chemistry (1)		3 (3+0)	Department of chemistry
	104 CHEM	General Chemistry Lab		1 (0+1)	Department of chemistry
	211 PLPT	Agricultural Microbiology		3 (2+1)	Dept. of Plant production
	332 ZOO	General Physiology		3 (2+1)	Department of zoology
Semester 5					
	315 FSN	Nutritional Biochemistry		3(3+0)	Food science and nutrition dept.
	317 FSN	Food Analysis		3 (1+2)	Food science and nutrition dept.
	323 FSN	Food Microbiology		4 (3+1)	Food science and nutrition dept.
	102 IC	Islam and Community Structure		2(2+0)	
	106 ANPR	Animal Production Systems		2(2+0)	Department of animal production
	108-1 CHEM	Introductory Organic Chemistry		4 (3+1)	Department of chemistry
Semester 6					
	325 FSN	Sanitation and Food Safety		2(2+0)	Food science and nutrition dept.
	352 FSN	Food Processing and Preservation		3(2+1)	Food science and nutrition dept.
	372 FSN	Assessment of Nutritional Status		2(1+1)	Food science and nutrition dept.
	376 FSN	Diets Planning		2(1+1)	Food science and nutrition dept.
	456 FSN	Quality Control and sensory Evaluation of Foods		2(1+1)	Food science and nutrition dept.
	103 IC	Economic System in Islam		2 (2+0)	
	201 PPS	Principles of Plant Production		3(2+1)	Department of plant production
	470 CHS	Nutrition and Disease		3(3+0)	College of health

					science
Semester 7	FSN 400	Cooperative Learning (internship)		12	Food science and nutrition dept. in collaboration with outside organizations
Semester 8	104 IC	Principles of Political System in Islam		2(2+0)	
Food Science (8 th semester)	Supporting Courses for Cooperative Learning in Food Science Fields Choose 15 credit hrs				
	420 FSN	Food Biotechnology		2(2+0)	Food science and nutrition dept.
	422 FSN	Food Service		2(2+0)	Food science and nutrition dept.
	433 FSN	Dairy Science and Technology		4(2+2)	Food science and nutrition dept.
	435 FSN	Dates Science and Technology		2(2+0)	Food science and nutrition dept.
	437 FSN	Cereal Science and Technology		4(2+2)	Food science and nutrition dept.
	439 FSN	Meat Science and Technology		4(2+2)	Food science and nutrition dept.
	471 FSN	Development of Food Products		2(1+1)	Food science and nutrition dept.
	320 AGEN	Principles of Food Process Engineering		3(2+1)	Food science and nutrition dept.
Human Nutrition (8 th semester)	Supporting Courses for Cooperative Learning in Human Nutrition Fields Choose 15 credit hrs				
	361 FSN	Nutrition during the Life Cycle		2(2+0)	Food science and nutrition dept.
	422 FSN	Food Service		2(2+0)	Food science and nutrition dept.
	464 FSN	Community Nutrition		3(2+1)	Food science and nutrition dept.
	465 FSN	Applied Nutrition		3(3+0)	Food science and nutrition dept.
	472 FSN	Problems of Nutrition in Developing Countries		2(2+0)	Food science and nutrition dept.
477 FSN	Micronutrients		2(2+0)	Food science and nutrition dept.	

	481 FSN	Selected Topics in Food and Nutrition		2(2+0)	Food science and nutrition dept.
	104 PA	Principle of General Administration		3(3+0)	Food science and nutrition dept.
	463 SOC	Medical Social Work		2(2+0)	
Include additional years if needed.					

2. Required Field Experience Component (if any, e.g. internship, cooperative program, work experience).

Summary of practical, clinical or internship component required in the program. Note: see Field Experience Specification
<p>a. Brief description of field experience activity</p> <p>The student works at selected public or private organization in Food and Nutrition related fields during internship training. The supervisor at the work place is responsible for guiding and assigning tasks to the student as well as reporting the student's progress to the internship committee and the Head of Department. General guidelines about what kind of tasks the student is supposed to practice are provided by the FSN department</p>
<p>b. At what stage or stages in the program does the field experience occur? (eg. year, semester)</p> <p>4rth year</p>
<p>c. Time allocation and scheduling arrangement. (eg. 3 days per week for 4 weeks, full time for one semester)</p> <p>Full semester and summer (24 weeks)</p>
<p>d. Number of credit hours (if any)</p> <p>12 credits</p>

3. Project or Research Requirements (if any)

Summary of any project or thesis requirements in the program. (Other than projects or assignments within individual courses) (A copy of the requirements for the project should be attached.)
<p>a. Brief description</p> <p>At bachelors level no such requirement.</p>
<p>b. List the major intended learning outcomes of the project or research task.</p> <p>Not applicable</p>
<p>c. At what stage or stages in the program is the project or research undertaken? (e.g. year,</p>

semester)
d. Number of credit hours (if any) Not applicable
e. Description of academic advising and support mechanisms for students. Not applicable

f. Description of assessment procedures (including mechanism for verification of standards)

Not applicable

4. Learning Outcomes in Domains of Learning, Assessment Methods and Teaching Strategy

Program Learning Outcomes, Assessment Methods, and Teaching Strategy work together and are aligned. They are joined together as one, coherent, unity that collectively articulate a consistent agreement between student learning and teaching.

The **National Qualification Framework** provides five learning domains. Learning outcomes are required in the first four domains and sometimes are also required in the Psychomotor Domain.

On the table below are the five NQF Learning Domains, numbered in the left column. For Program Accreditation there are four learning outcomes required for knowledge and cognitive skills. The other three domains require at least two learning outcomes. Additional learning outcomes are suggested.

First, insert the suitable and measurable learning outcomes required in each of the learning domains (see suggestions below the table). **Second**, insert supporting teaching strategies that fit and align with the assessment methods and intended learning outcomes. **Third**, insert appropriate assessment methods that accurately measure and evaluate the learning outcome. Each program learning outcomes, assessment method, and teaching strategy ought to reasonably fit and flow together as an integrated learning and teaching process.

	NQF Learning Domains and Learning Outcomes	Teaching Strategies	Assessment Methods
1.0	Knowledge		
1.1	Define the subject matter of food science and nutrition	Lectures, tutorials, assignments, summarizing paper, presentations, and essay questions, and internet search.	Exams, quizzes, midterm finals, papers/projects, and special assignment.
1.2	List the subjects and the areas of knowledge required		
1.3	Describe knowledge in analysis, design and development of subject application.		
1.4	Understand the concepts of Food Science Technology and Human Nutrition.		
1.5	Communicate food science and nutrition knowledge effectively with others in one-on-one, small-group, and large-group situations		
2.0	Cognitive Skills		
2.1	Apply and communicate knowledge to the intended.	Lectures, labs, practical assignments requiring problem solving, case studies and discussions.	30% of final grade to be based on practical exams and seminar Seminars. The remaining 70% are allocated for written exams
2.2	Develop comprehensive awareness of analytical skills, new product development, food industry problem solving, and meal planning for special cases.		
2.3	Differentiate understand the reason for choosing different food processing methods as well as the effect of processing on the nutritional value of foods		
2.4	Prepare a meal plan for hospitalized patient by calculating calories need		
3.0	Interpersonal Skills & Responsibility		
3.1	Interpret a situation and decide possible source of problems and demonstrate ability to communicate the problem to others	Out of class activities, such as hospital and industry visits	Observation, Self-evaluation, Peers' evaluation, and Email communication between student and staff
3.2	Demonstrate ability to recognize food production problems. Judge a nutrition situation related to disease such as malnutrition		
4.0	Communication, Information Technology, Numerical		
4.1	Interpret real malnutrition cases or troubleshoot a food- production problem in a production line.	Group sessions and case study. lectures, tutorials and labs, assignments: summarizing papers, presentations and essay questions, and practical	Report evaluation and exams

		assignments requiring problem solving	
4.2			
5.0	Psychomotor		
5.1	Prepare a nutritional plan and perform necessary diagnostics on specific subject, and examine the outcome of the plan as part of reducing malnutrition	Group sessions and case study.	Report evaluation and exams

NQF Learning Outcome Verb, Assessment, and Teaching Strategies and Suggestions

NQF Learning Domains	Suggested Verbs
Knowledge	list, name, record, define, label, outline, state, describe, recall, memorize, reproduce, recognize, record, tell, write
Cognitive Skills	estimate, explain, summarize, write, compare, contrast, diagram, subdivide, differentiate, criticize, calculate, analyze, compose, develop, create, prepare, reconstruct, reorganize, summarize, explain, predict, justify, rate, evaluate, plan, design, measure, judge, justify, interpret, appraise
Interpersonal Skills & Responsibility	demonstrate, judge, choose, illustrate, modify, show, use, appraise, evaluate, justify, analyze, question, and write
Communication, Information Technology, Numerical	demonstrate, calculate, illustrate, interpret, research, question, operate, appraise, evaluate, assess, and criticize
Psychomotor	demonstrate, show, illustrate, perform, dramatize, employ, manipulate, operate, prepare, produce, draw, diagram, examine, construct, assemble, experiment, and reconstruct

Suggested **verbs not to use** when writing measurable and assessable learning outcomes are as follows:

Consider	Maximize	Continue	Review	Ensure	Enlarge	Understand
Maintain	Reflect	Examine	Strengthen	Explore	Encourage	Deepen

Some of these verbs can be used if tied to specific actions or quantification.

Suggested assessment methods and teaching strategies are:

According to research and best practices, multiple and continuous assessment methods are required to verify student learning. Current trends incorporate a wide range of rubric assessment tools; including web-based student performance systems that apply rubrics, benchmarks, KPIs, and analysis. Rubrics are especially helpful for qualitative evaluation. Differentiated assessment strategies include: exams, portfolios, long and short essays, log books, analytical reports, individual and group presentations, posters, journals, case studies, lab manuals, video analysis, group reports, lab reports, debates, speeches, learning logs, peer evaluations, self-evaluations, videos, graphs, dramatic performances, tables, demonstrations, graphic organizers, discussion forums, interviews, learning contracts, antidotal notes, artwork, KWL charts, and concept mapping.

Differentiated teaching strategies should be selected to align with the curriculum taught, the needs of students, and the intended learning outcomes. Teaching methods include: lecture, debate, small group work, whole group and small group discussion, research activities, lab demonstrations, projects, debates, role playing, case studies, guest speakers, memorization, humor, individual presentation, brainstorming, and a wide variety of hands-on student learning activities.

Program Learning Outcome Mapping Matrix

Identify on the table below the courses that are required to teach the program learning outcomes. Insert the program learning outcomes, according to the level of instruction, from the above table below and indicate the courses and levels that are required to teach each one; use your program's course numbers across the top and the following level scale. Levels: I = Introduction P = Proficient A = Advanced

	Course Offerings	108-109	104-105-106-107-	102-103-	FSN-100-	FSN-202-205-206-211	376-400	361-372-	325-332-	320-323-	316-317-	FSN-315-	481	472-477-	470-471-	464-465-	456-463-	437-439-	433-435-	420-422-	FSN-400--
1.0	Knowledge			I																	
1.1	Define the subject matter of food science and nutrition			I																	
1.2	List the subjects and the areas of knowledge required			I																	
1.3	Describe knowledge in analysis, design and development of subject application.				I																
1.4	Understand the concepts of Food Science Technology and Human Nutrition.				I																
1.5	Communicate food science and nutrition knowledge effectively with others in one-on-one, small-group, and large-group situations				I	P															
2.0	Cognitive Skills																				
2.1	Apply and communicate knowledge to the intended.					P															
2.2	Develop comprehensive awareness of analytical skills, new product development, food industry problem solving, and meal planning for special cases.					P															
2.3	Differentiate understand the reason for choosing different food processing methods as well as the effect of processing					P															

	on the nutritional value of foods				
2.4	Prepare a meal plan for hospitalized patient by calculating calories need		P		
3.0	Interpersonal Skills & Responsibility				
3.1	Interpret a situation and decide possible source of problems and demonstrate ability to communicate the problem to others			A	
3.2	Demonstrate ability to recognize food production problems. Judge a nutrition situation related to disease such as malnutrition			A	
4.0	Communication, Information Technology, Numerical				
4.1	Interpret real malnutrition cases or troubleshoot a food-production problem in a production line.			A	
5.0	Psychomotor				
5.1	Prepare a nutritional plan and perform necessary diagnostics on specific subject, and examine the outcome of the plan as part of reducing malnutrition				A

5. Admission Requirements for the program

Attach handbook or bulletin description of admission requirements including any course or experience prerequisites.

6. Attendance and Completion Requirements

Attach handbook or bulletin description of requirements for:

- Attendance.
- Progression from year to year.
- Program completion or graduation requirements.

E. Regulations for Student Assessment and Verification of Standards

What processes will be used for verifying standards of achievement (eg check marking of sample of tests or assignments? Independent assessment by faculty from another institution) (Processes may vary for different courses or domains of learning.)

According to university regulations given by the Ministry of Higher Education the final exam should account for at least 40% of the final mark and the final exam may be written. In case of internship training, supervisors of students during industrial training are requested to evaluate their performance and submit a written score to the department chair. Students' assignments can be evaluated by different examiners from different institutions or from within the department. Product development competition supervised by industrial expert can be used as an evaluation method to assess the student's capabilities to conduct small research projects. The final exam of similar courses can be compared with other institutions.

F Student Administration and Support

1. Student Academic Counselling

Describe the arrangements for academic counselling and advising for students, including both scheduling of faculty office hours and advising on program planning, subject selection and career planning (which might be available at college level).

Each student is assigned an advisor at the beginning of the program who will follow the student's progress until graduation. Faculty should have up to 3 office hours for each section they are teaching, some of which may be by appointment.

2. Student Appeals

Attach the regulations for student appeals on academic matters, including processes for consideration of those appeals.

Attached is the student's appeals manual

G. Learning Resources, Facilities and Equipment

1a. What processes are followed by faculty and teaching staff for planning and acquisition of textbooks, reference and other resource material including electronic and web based resources?

Requests are made by faculty teaching the courses to the acquisition committee where it will be reviewed to ensure relevance to courses specifications and appropriateness for the student level. In addition for textbooks it should be ensured that it covers all subjects stated in the course specification. The committee should consist of faculty members of different specialization.

1b. What processes are followed by faculty and teaching staff for planning and acquisition resources for library, laboratories, and classrooms.

Periodic meetings of the acquisition committee of the department and requests are submitted for financial approval

2. What processes are followed by faculty and teaching staff for evaluating the adequacy of textbooks, reference and other resource provisions?

Acquisition committee evaluates requests made by faculty member are required to contact the main library or departmental library, in some cases, and request the textbook and verify the presence of several copies for students to use in the library or check out. Some faculty member prepare their own class notes and distribute to the students. Faculty of different departments are also allowed to request specific books as well

3. What processes are followed by students for evaluating the adequacy of textbooks, reference and other resource provisions?

Faculty member are required to contact the mail library or departmental library and request the textbook and verify the presence of several copies for students to use in the library or check out. Students are requested to check with the main library to ensure adequacy of the text book as pointed out by the faculty who is teaching the course as part of the syllabus. Some faculty members distribute their own class notes to the students during class time.

4. What processes are followed for textbook acquisition and approval?

Within each department, faculty can suggest books to be available in the main library of college or

department library if there is one. The main library makes the purchase of the books and make it available for students and faculty for using or to check out.

H. Faculty and other Teaching Staff

1. Appointments

Summarize the process of employment of new faculty and teaching staff to ensure that they are appropriately qualified and experienced for their teaching responsibilities.

The following steps are used for hiring faculty members:

- The department's board requests the position and after approved by KSU administration.
- The position will be announced including requirements and qualifications.
- Resume Review: Degree attained must be from a reputed or well know university and any other documents submitted by applicants will be checked.
- Interview and demonstration in front of a committee consisting of faculty members at least one of whom has the same specialization as the applicant.
- The list of research publication (particularly in international journals) of candidates will be looked at closely.

2. Participation in Program Planning, Monitoring and Review

a. Explain the process for consultation with and involvement of teaching staff in monitoring program quality, annual review and planning for improvement.

The department council is responsible for monitoring and improving program quality. The council takes feedback from subcommittees for each speciality of the department and evaluate the submitted views. The council will also check student progress over the years and commencement rate. In addition, the council reviews syllabi of the course for updates. The department does have a quality management system (QMS) committee which is responsible for making sure that the department is in compliance with the KSU and the Ministry of Higher Education requirements.

b. Explain the process of the Advisory Committee (if applicable)

The decision was made by the College of Food and Agriculture Sciences to form an advisory committee for all departments of the college including FSN department. In addition, FSN has contact with private companies who participate in student internship program and keeps them informed about issues related to the overall strategic plans of the department.

3. Professional; Development

What arrangements are made for professional development of faculty and teaching staff for:

a. Improvement of skills in teaching and student assessment?

The following measures are taking for faculty and teaching staff professional development.

- Attend the workshops organized by the Deanship of Quality at King Saud University
- Attend the summer training offered by KSU abroad for a number of issues such as leadership skills development; enhance teaching and learning of faculty members. The program is offered every summer and it is open for all.
- Sharing of “know-how’ of new tools though short courses and seminars.
- Participating in international workshops for personal professional improvement.

b. Other professional development including knowledge of research and developments in their field of teaching specialty?

- Faculty are encouraged to attend foreign universities research program for their sabbatical leave.
- Local and international conferences attendance is supported by KSU as well.

4. Preparation of New Faculty and Teaching Staff

Describe the process used for orientation and induction of new, visiting or part time teaching staff to ensure full understanding of the program and the role of the course(s) they teach as components within it.

For new faculty members, special workshops offered by the Dean Ship of skills development at King Saud University for new faculty members in a form of orientation. The university offers new faculty special financial support so that to kick off their research activities. This program is open for all new faculty members.

5. Part Time and Visiting Faculty and Teaching Staff

Provide a summary of Program/Department/College/institution policy on appointment of part time and visiting teaching staff. (ie. Approvals required, selection process, proportion to total teaching staff, etc.)

When needed, selection will be done by a faculty committee (department's board) of the department or by a university wide program allocated for these types of activities, such as the attraction program,

visiting scientist program decided by the institution.

I. Program Evaluation and Improvement Processes

1. Effectiveness of Teaching

a. What processes are used to evaluate and improve the strategies for developing learning outcomes in the different domains of learning? (eg. assessment of learning achieved, advice on consistency with learning theory for different types of learning, assessment of understanding and skill of teaching staff in using different strategies)

The learning outcome of the department is measured by the direct examination of some sort such as writes exams, oral exams, lab exam, or project evaluation. The exams can be evaluated by external faculty to the department. The exams results are reported as part of the course report, analyzed, and included in the program annual report, which is done for every course taught. The analyzed data is available for department council for any decision to be made regarding specific course. Feedbacks from stakeholders regarding the appropriateness of what students learn after completing the program are also gathered. Finally, student evaluation on teaching quality are gathered for every course and analyzed and used by the QMS committee.

b. What processes are used for evaluating the skills of faculty and teaching staff in using the planned strategies?

Three different ways to assess adhering to planned teaching strategy:

- Student evaluations one after first midterm and one after final exam.
- Chairperson evaluation.
- Self and peers evaluation.

2. Overall Program Evaluation

a. What strategies are used in the program for obtaining assessments of the overall quality of the program and achievement of its intended learning outcomes:

(i) From current students and graduates of the program?

- Collect information about student performance and their grade distribution over the years.
- Evaluation from employers of working graduates.
- Follow up with students (graduates of the department) who are seeking higher degrees abroad

(ii) From independent advisors and/or evaluator(s)?.

<ul style="list-style-type: none">• Ask representative of the NCAA commission to evaluate the program.• Seek accreditation from international agencies
(iii) From employers and/or other stakeholders. <ul style="list-style-type: none">• Meeting to discuss area of improvements and conduct a survey among stakeholder.

Complete the following two tables.

1. Program KPI and Assessment Table

2. Program Action Plan Table

Program KPI and Assessment Table

KPI #	List of Program KPIs Approved by the Institution	KPI Target Benchmark	KPI Actual Benchmark	KPI Internal Benchmarks	KPI External Benchmarks	KPI Analysis	KPI New Target Benchmark
1	Stakeholders evaluation rating of the mission statement; Code# 1.1 of NCAAA KPIs table	4/5	3.75	3.7		The faculty awareness and application of the vision and mission of the department averaged at 3.7 out of 5, whereas employees responded by yes at 3.7 out of 5 aware of the mission vision of the FSN department. The relatively low response of the faculty regarding the vision and mission was due to the second part of the question because it has to do with strategic planning for the program. As mentioned above, FSN faculty members drafted the mission/vision of the department, so they are aware of it and 5/5	4/5

						score is met, but as stated in the second part of the question regarding its use in the strategic planning for the program is effected by external issues under the university jurisdiction or the college such as financing and students registration, thus the score fell short of the targeted benchmark.	
2	Ratio of student to teaching staff; Code# 4.1	19:1	14:1	19:1	17:1	The department exceeded its target for faculty student ratio which can reflect well on faculty availability for students and for carrying other activities related to other objectives of the department such as research projects and bringing external funding and community service.	1:14

						The average of faculty:student ratio for 4 US universities was (University of IL, Michigan State university, Ohio state university, and University of Wisconsin) is 1:17.	
3	Proportion of students entering the FSN undergraduate program who complete the program in minimum time, Code#4.5	The department is targeting 80% graduation in 4 years, which is the minimum time set by the Ministry of Higher Education	4%	80%	Target Ohio State university graduation rate was 83% on 2013	Based on the 2013 graduation, 42% of the students graduate after five years while 39% graduated after 6 years and the remaining graduated in more than 6 years. This could be attributed to pre-requested courses offered by the science department or due to the internship program which requires one whole semester (12 credits) to complete. Since students are assigned to the department by the registrar office and not	80%

						by their choice, this could have adverse effect on their starting time after acceptance. This can be observed by the number of the registered students and the number of those who actually start the program.	
4	Students evaluation of the academic and career counselling (average rating on the adequacy of career and academic counselling on five points scale), Code#5.3	4.5/5 satisfaction with the program academic and career counselling	3.6/5	4.5/5		The results achieved were apparent in the number of students and alumni who were satisfied with this skill as shown by the positive feedback we receive during our annual review of the program. The program was also benchmarked against the Institute of Food Technologists (IFT) of Chicago, Illinois. The program was also verified and was given accredited by the Agriculture Institute of Canada (AIC). These	4.5/5

						two recommendations are excellent indicators of the soundness of the program.	
5	Average overall rating of adequacy of facilities and equipment in a survey of teaching staff Code# 7.3	4.5/5 teaching staff satisfaction with the facilities	3.5/5	4.5/5		Teaching staff are 4.5/5 satisfied with the class rooms' preparation. The department did not meet its target benchmark because of the adequacy of research facilities. FSN established acquisition committee to respond to requests for instrumentation by teaching staff. The department possess a good number of high tech instrumentation commonly used in food and nutrition and comparable with most known US universities in the area of food science i.e., Ohio state, Michigan state, and	4.5/5

						University of Wisconsin. Improvement is needed in safety and maintenance in labs and better teaching staff training. The FSN will also prepare and display standard operating procedure for all instruments.	
6	Proportion of full time member of teaching staff with at least one refereed publication during previous year Cod#10.3	Target was set at 4 out of 5 faculty	5/5	4/5		The department exceeds its target for publication which is a result of the highly focused faculty members on research. Seven faculty members of the department are consultants with the Saudi Food and Drugs Agency, Consumer Protection Association, and Ministry of Commerce. Six faculty members of the department were very successful in bringing outside funds. Overall,	4.5/5

						21 big projects (two years at least) were funded by King Abdulaziz City for Science and Technology (KACST) and 32 projects were funded by the Research Center at the College of Food and Agricultural Sciences in the last five years. Three projects are under consideration by KACST and the National Plan at this point. These projects involve 15 faculty members (79% of FSN faculty members).	
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Analysis of KPIs and Benchmarks: (list strengths and recommendations)

Strengths

- 1 The vision, mission, and objectives are clear, appropriate, aligned with the college and the university mission, reflect the interest of internal and external Stakeholders, used as bases for strategic and operational plans for the department
2. The FSN exceeded the ratio of faculty to student ratio compared with three major US universities in the area of food science and nutrition. This allow for better interaction between teaching staff and students and lowers the teaching load on faculty which reflected well on their research activities and

community service.

3. Although, FSN graduation rate is low relative to international universities, it is within the 4-6 years set by the Saudi Ministry of Higher Education.
4. Students are satisfied with the kind of career preparation are receiving after graduation from FSN. The faculty on the other hand are satisfied with the research and teaching facilities at the department. This reflected well on the research activities at the department and resulted in an excellent publication rate of faculty members at peer reviewed journals.

Recommendations for improvement

The mission of the department needs to be communicated to more private industry, alumni, and be better utilized in the daily activities of the department, especially in the area of QMS. The low ratio of faculty to student should be better utilized to expand research and seek external funding by writing grant proposals to public and private funding agencies. The expansion of research will automatically have a positive effect on the quality and quantity of publications including patents. The graduation rate can be accelerated by closer monitoring students at the beginning of their college education and give advice to them regarding courses and help them to develop a three years plan and monitor their annual progress rate.

NOTE The following definitions are provided to guide the completion of the above table for Program KPI and Assessment.

KPI refers to the key performance indicators the programs used in the SSRP and are approved by the institution (if applicable at this time). This includes both the NCAAA suggested KPIs chosen and all additional KPIs determined by the program (including 50% of the NCAAA suggested KPIs and all others).

Target Benchmark refers to the anticipated or desired outcome (goal or aim) for each KPI.

Actual Benchmark refers to the actual outcome determined when the KPI is measured or calculated.

Internal Benchmarks refer to comparable benchmarks (actual benchmarks) from inside the program (like data results from previous years or data results from other departments within the same college).

External Benchmarks refer to comparable benchmarks (actual benchmarks) from similar programs that are outside the program (like from similar programs that are national or international).

KPI Analysis refers to a comparison and contrast of the benchmarks to determine strengths and recommendations for improvement.

New Target Benchmark refers to the establishment of a new anticipated or desired outcome for the KPI that is based on the KPI analysis.

Program Action Plan Table

Directions: Based on your “*Analysis of KPIs and Benchmarks*” provided in the above Program KPI and Assessment Table, list the recommendations identified below.

No.	Recommendations	Action Points	Assessment Criteria	Responsible Person	Start Date	Completion Date
1	The mission of the department needs to be communicated to more private industry, alumni, and be better utilized in the daily activities of the department, especially in the area of QMS.	Develop an e-mail list for alumni, public, and private sectors for steady contact. Start setting up implementing KSU's quality management system for applying the mission of the department	Survey alumni and private industry, analyze the data and use it for further planning. Compare what was accomplished with what is required by KSU QMS	Director of the Quality management System team at FSN	2014	2015
2	The low ratio of faculty to student should be better utilized	Request faculty members to encourage students to stay in contact with them for advice at the beginning of every semester at least	Count how many students contacted their advisors and how many tries advisors made to contact students and encourage them. Surveys of the faculty and the students will be done	Director of the Quality management System team at FSN	2014	2015
3	Expand research and seek external funding by writing grant proposals to public and private funding agencies.	Appeal to faculty to write grant proposals for attracting external funding for research	Determine the number of proposals submitted per faculty member	Director of the Quality management System team at FSN	2014	2016
4	The expansion of research will automatically have a positive effect on the quality of publications	Develop a reporting system so that faculty will declare the stages of their publications and the expected time for	Evaluate reports and develop progress figures for all faculty and analyze the outcome	Director of the Quality management System team at FSN	2014	2015

		submission				
5	The graduation rate can be accelerated by closer monitoring students at the beginning of their college education	Follow the graduation rate every semester. Determine the effect of the measures taken by the department of the institution for accelerating the rate.	Calculate change in graduation rate and follow progress	Director of the Quality management System team at FSN	2014	2015
6	Develop a three years academic plan for individual students and monitor their annual progress rate.	Set up a mechanism for developing a plan to encourage students to have a three years plan	Determine how many student response to this call and suggest ways to increase participation	Director of the Quality management System team at FSN	2014	2015
Action Plan Analysis (List the strengths and recommendations for improvement of the Program Action Plan).						

Attachments:

1. Copies of regulations and other documents referred to in template preceded by a table of contents.
2. Course specifications for all courses including field experience specification if applicable.

Authorized Signatures

Dean / Program Chair	Name	Title	Signature	Date
Program Dean or Chair of Board of Trustees Main Campus				
Vice Rector				