Kingdom of Saudi Arabia
National Commission for
Academic Accreditation & Assessment

المملكة العربية السعودية
الهيئة الوطنية للتقويم
والاعتماد الأكاديمي

ATTACHMENT 2 (e)

Course Specifications

Kingdom of Saudi Arabia

The National Commission for Academic Accreditation & Assessment

Course Specifications
(CS)
Food Product Development (471FSN)

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Course Specifications

Institution	Date of Report
King Saud University	05/02/2014
College/Department Food and Agriculture Sciences/Food Science and Nutrition	

A. Course Identification and General Information

1. Course title and code: Food Product Development (471FSN)

2. Credit hours   1+1

3. Program(s) in which the course is offered.

   Bachelor degree of Agricultural Sciences in the fields of Food Science and Human Nutrition
   (If general elective available in many programs indicate this rather than list programs)

4. Name of faculty member responsible for the course Prof. Hassan A. Al-Kahtani

5. Level/year at which this course is offered: Level-8th

6. Pre-requisites for this course (if any)
   Food Processing and   Preservation (FSN 352) and Cooperative learning (FSN 400)

7. Co-requisites for this course (if any)

8. Location if not on main campus Main Campus

9. Mode of Instruction (mark all that apply)

   a. Traditional classroom   ✓   What percentage?   100

   b. Blended (traditional and online)   ☐   What percentage?   ☐

   c. e-learning   ☐   What percentage?   ☐

   d. Correspondence   ☐   What percentage?   ☐

   f. Other   ☐   What percentage?   ☐

Comments:

Smart Board Class rooms.

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B Objectives

1. What is the main purpose for this course?
- To develop the students' understanding about research and development in food industry and products categories for development.   - To develop the students' ability strategic planning, objectives, development team and technical groups and theirs responsibility.   - To familiarize students with different stages of product development, from generation of ideas from different sources and sorting to commercial new product.   - To train students in implementation stage, bench-top prototype development, pilot plant scale, commercial food factory scale, market testing and product success or failure and product testing including sensory evaluation
2. Briefly describe any plans for developing and improving the course that are being implemented. (e.g. increased use of IT or web based reference material, changes in content as a result of new research in the field) More group open discussion, more market survey for new ideas, establishing cooperation with food industry. The course will be updated regularly on the basis of feedback from different sectors from students, industry, reviewer and departmental council recommendations.

C. Course Description (Note: General description in the form to be used for the Bulletin or handbook should be attached)

1. Topics to be Covered

List of Topics	No. of Weeks	Contact Hours
Introduction of food product development, convince food categories	1	2
Challenges facing food industry	1	2
Strategic planning and management	1	2
stages of product development, from generation of ideas till commercial product	3	6
Research and development team and technical groups	2	6
Market testing and product success or failure	1	2
Student assignment of new product reporting and presentation	6	30

2. Course components (total contact hours and credits per semester):

	Lecture	Tutorial	Laboratory	Practical	Other:	Total
Contact Hours	20			30		50
Credit	1			1		2

3. Additional private study/learning hours expected for students per week.	3

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4. Course Learning Outcomes in NQF Domains of Learning and Alignment with Assessment Methods and Teaching Strategy

Course 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, assessment, and teaching.

The *National Qualification Framework* provides five learning domains. Course learning outcomes are required. Normally a course has should not exceed eight learning outcomes which align with one or more of the five learning domains. Some courses have one or more program learning outcomes integrated into the course learning outcomes to demonstrate program learning outcome alignment. The program learning outcome matrix map identifies which program learning outcomes are incorporated into specific courses.

On the table below are the five NQF Learning Domains, numbered in the left column.

First, insert the suitable and measurable course learning outcomes required in the appropriate 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 course learning outcomes, assessment method, and teaching strategy ought to reasonably fit and flow together as an integrated learning and teaching process. **Fourth**, if any program learning outcomes are included in the course learning outcomes, place the @ symbol next to it.

Every course is not required to include learning outcomes from each domain.

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		NQF Learning Domains And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Methods
1.0		**Knowledge**		
	1.1	Student learns about food ingredients functions and initial stages of product development	Lectures Presentations	Exams Lab reports
	1.2	Student can generate ideas and develop the concept till formal presentation of product	Lectures Presentations	Exams Lab reports
	1.3	He can learn how to implement product concept and preliminary product process in to a prototype	Lectures Presentations	Exams Lab reports
	1.4	He will learn product testing including sensory evaluation, pilot plant operation with reference to industrial production	Laboratory work Report writing	Exams Lab reports
2.0		**Cognitive Skills**		
	2.1	Student learns about selection of food ingredients using statistical methods	Homework Assignments	Lab reports Exams Assignments
	2.2	Analyses of sensory evaluation data	Data analysis	Lab reports Exams Assignments
3.0		**Interpersonal Skills & Responsibility**		
	3.1	Student learn how to work independently and as part of a team being a food professional	Lab work in group Problem solving as team	Lab reports Practical exams Assignments
	3.2	Students can learn how to present results of work in lab reports	writing reports	Lab exams Lab reports Assignments
4.0		**Communication, Information Technology, Numerical**		
	4.1	Students learn to use computer and internet to get information related to the course topics	Lab reports Internet search Reference collection	Lab reports Assignments
	4.2	Student use statistical methods for sensory evaluation data.	Lab work	Lab reports Assignments
	4.3	Students use computational tools to analyze and process the experimental data	Data analysis	Lab reports Assignments
5.0		**Psychomotor**		
	5.1	Student learn how to perform food product development experiments	Practical work	Exam Practical evaluation
	5.2	Students can get skills for chemical analysis, precise measurements and sensory analysis	Practical work demonstration	Exam Practical evaluation

Suggested Guidelines for Learning Outcome Verb, Assessment, and Teaching

NQF Learning Domains	Suggested Verbs
	list, name, record, define, label, outline, state, describe, recall, memorize,

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Knowledge	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.

5. Schedule of Assessment Tasks for Students During the Semester

	Assessment task (e.g. essay, test, group project, examination, speech, oral presentation, etc.)	Week Due	Proportion of Total Assessment
1	First Exam	Week (5)	15
2	Second Exam	Week (9)	15
3	Speech & participation	--	10

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4	New product development project and report and presentation	--	60

D. Student Academic Counseling and Support

1. Arrangements for availability of faculty and teaching staff for individual student consultations and academic advice. (include amount of time teaching staff are expected to be available each week)

- Office hours 4 hr/ week.
- Help sessions 5 hr/ week for lab assignments aided by teaching assistants.

E. Learning Resources

1. List Required Textbooks

- Robert C. Baker & Patricia Wong Hahn & Kelly R. Robbins. Fundamentals of new Foods Products Development.1994.Elsevier Science.
- Other related food technology reference books

2. List Essential References Materials (Journals, Reports, etc.)
- Meilgaard, Civille and Carr. Sensory Evaluation Techniques 4th ed.2006.CRC Press, USA.

3. List Recommended Textbooks and Reference Material (Journals, Reports, etc)
There are no specific journals but different food science and technology journals can be consulted such as
- Food Research International
- Trends in Food Science and Technology
- LWT-Food Science and Technology
- Innovative Food Science and Emerging Technologies

4. List Electronic Materials (eg. Web Sites, Social Media, Blackboard, etc.)
- www.sciendirect.com
- Electronic sources for journals
- News about food product development

5. Other learning material such as computer-based programs/CD, professional standards or regulations and software.
Food standards and reulations.

F. Facilities Required

Indicate requirements for the course including size of classrooms and laboratories (i.e. number of seats in classrooms and laboratories, extent of computer access etc.)

1. Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.)
- Lecture room with at least 30 seats.
- Food processing Lab.
- Sensory evaluation room.

2. Computing resources (AV, data show, Smart Board, software, etc.)

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Computer room containing at least 20 systems
3. Other resources (specify, e.g. if specific laboratory equipment is required, list requirements or attach list) • Chemicals and glass wear. • Food materials as required.

G   Course Evaluation and Improvement Processes

1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching • Course evaluation by student. • Students meetings with faculty.
2 Other Strategies for Evaluation of Teaching by the Program/Department Instructor • Departmental council discussions
3 Processes for Improvement of Teaching • Review by the instructor for updating course material with new information in the field. • Review by the instructor about teaching methods and updating them using new teaching technology.
4. Processes for Verifying Standards of Student Achievement (e.g. check marking by an independent member teaching staff of a sample of student work, periodic exchange and remarking of tests or a sample of assignments with staff at another institution) • Supervisors of students during industrial training are requested to evaluate their performance. • Students' assignments can be evaluated by external examiners from different institutions or from within the department. • Product development competition supervised by industrial expert can be used as an evaluation method to access the student's capabilities.

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5 Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement.

The courses offered during different semesters are discussed in council at departmental level. The council is represented by faculty members. Periodic improvements proposed by instructor based on current requirements can be done upon recommendations of department council. Effectiveness of the course contents can be assessed by having a feedback from the graduates working in public and private sector. Council may have one representative from public and private sector. The course should fulfill the mission of the FSN department in contributing to knowledge based economy objectives.

Faculty or Teaching Staff: **Prof. Hassan A. Al-Kahtani**

Signature: _____   **Date Report Completed:** _____

Received by: _____   **Dean/Department Head**

Signature: _____   **Date:** _____