ATTACHMENT 2 (e)

Course Specifications

Kingdom of Saudi Arabia

The National Commission for Academic Accreditation & Assessment

Course Specifications
(CS)
Food Preservation and Processing
FSN 352

Course Specifications

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

A. Course Identification and General Information

1. Course title and code:
Food Preservation and Processing (352FSN)

2. Credit hours
3 (2+1) credits

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

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/Prof. Mohammed S. Al-Jaser

5. Level/year at which this course is offered: Level-6th

6. Pre-requisites for this course (if any)
322 FSN Food Microbiology

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:
Most of the teaching method is traditional class room with smart board and visual aid devices. Students will be gives assignments to gather information on line and attend video description of different operations related to bread baking and other cereal related operations.

B Objectives

1. What is the main purpose for this course? Main purposes of this course are to provide concepts about food preservation and processing; up to date information on the subject using current practices and techniques in international and national food manufacturing and preservation companies; cold storage of fruits and vegetable; freezing of meat and meat products etc.; to enable students to comply with market requirements and to improve the community standards.
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) • Collection of updated information from published research. • Search for recent books and modern techniques in food industry. • Development of food irradiation program and research in this field. • Collection of latest information from internet and enlisting websites useful for information on food processing and preservation.

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
Classification of Food Processing methods	1	4
Refrigeration, Freezing, Drying and Canning.	4	16
Food Irradiation	2	8
Processing units and Process lines	2	8
Raw materials and Food fortification.	1	2

2. Course components (total contact hours and credits per semester):						
	Lecture	Tutorial	Laboratory	Practical	Other:	Total
Contact Hours	25		12			37
Credit	2		1			3

3. Additional private study/learning hours expected for students per week.	5

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.

	NQF Learning Domains And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Methods
1.0	**Knowledge**		
1.1	Scientific and applied knowledge about food preservation and processing technologies	Lectures Reports	Exams Reports Quizzes
1.2	Responsibilities of food specialists towards the society and community	Lectures Lab work Food factories visits	Exams Reports Quizzes
2.0	**Cognitive Skills**		
2.1	Food preservation techniques using heat treatment, canning, cold storage and freezing in relation to the type of food such as fruits, vegetables, meat and fish.	Lectures Industrial visits	Quizzes Exams Reports of the industry visit.
2.2	Food processing techniques, thermal treatment, packaging, evaporation, homogenization etc.	Lectures Field visits	Quizzes Exams Reports of the industry visit
3.0	**Interpersonal Skills & Responsibility**		
3.1	Students learn to accomplish projects related to food preservation and processing techniques.	Project assignment	Discussion Reports
3.2	Students demonstrate ability to recognize proper food processing methods	Seminar Presentation	Evaluation by faculty members on point scale.
4.0	**Communication, Information Technology, Numerical**		
4.1	Collect and Interpret data related to production problems in a food processing facility	Blackboard e-gate	Exams Personal interactions
4.2	Lear to troubleshoot food processing problems		
5.0	**Psychomotor**		
5.1	Design, perform, and supervise processing of food raw material to a final product following all food preservation and processing techniques.	Laboratory experiments	Lab exams
5.2			

Suggested Guidelines for Learning Outcome Verb, Assessment, and Teaching

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	demonstrate, calculate, illustrate, interpret, research, question, operate,

Technology, Numerical	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)	20
2	Lab. Exam	Week (6)	10
3	Second Exam	Week (9)	20
4	Final Exam	Week (13)	20
5	Final Lab Exam	Week (12)	10
6	Lab. Reports	Every week	10
7	Participation & Quizzes	--	10
8			

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) • At least 3 hours a week. • Communication through E-mail

E. Learning Resources

List Required Textbooks • Food Processing and Preservation (Publisher: Prentice-Hall of India Pvt. Ltd.). • Food Processing and Preservation (Publisher: Unitech Communications).
2. List Essential References Materials (Journals, Reports, etc.) • Food Technology • Journal of Food Science • Journal of Food Additives • Food Chemistry
3. List Recommended Textbooks and Reference Material (Journals, Reports, etc) • The Food Preservation Techniques Published by Wood head Publishing Ltd. • Hand Book of Food Preservation Published by CRC Press.
4. List Electronic Materials (eg. Web Sites, Social Media, Blackboard, etc.) • faculty.ksu.edu.sa/1809 • www.fioodprocessing.com • www.foodirradiation.com • www.foodhaccp.com
5. Other learning material such as computer-based programs/CD, professional standards or regulations and software. • Operation manuals of some sophisticated equipment (e.g. HPLC, GLC, ICP).

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.) • One room of 30 seats for lectures. • One teaching lab. • Pilot plants of some processing methods.

2. Computing resources (AV, data show, Smart Board, software, etc.) • Harshaw TLD software
3. Other resources (specify, e.g. if specific laboratory equipment is required, list requirements or attach list) • Thermoluminescence dosimetry reader (TLD, redader) Harshaw-3000 • Titration apparatus for Vitamin C determination. • Drying oven. • More pilot plants are required (e.g. tunnel drying food irradiation Gama cell 220, food product development equipment, agitating retort, extruder, expeller, vacuum packaging machine).

G Course Evaluation and Improvement Processes

1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching • Evaluation by questionnaires about teaching. • Round table discussions with students.
2 Other Strategies for Evaluation of Teaching by the Program/Department Instructor • Student examination marks or grades. • Students' interview about their satisfaction and information obtained in the course.
3 Processes for Improvement of Teaching • Review of recommended teaching strategies. • Use of teaching tools and videotape projection. • Making use of smart class. • Conference rooms communication. • Field trips to the local Food processing and preservation industries.
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) • Other staff members in the area of food processing inside and/or outside can be consulted • Supervisors of students during industrial training are requested to evaluate their performance. • Students' assignments can be evaluated by eternal examiners from different institutions or from within the department.

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

- Focus group discussions with students.
- Discussion with other staff members.
- Reviewing similar courses elsewhere in the world.
- Benchmarking the course with other institution teaching the same course.

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 / Prof. Mohammed S. Al-Jaser

Signature: _____ Date Report Completed: _____

Received by: _____ Dean/Department Head

Signature: _____ Date: _____