



Self-Assessment Report

**Department of Food Science & Technology
University of Karachi**

Submitted to

**Quality Enhancement Cell
University of Karachi**



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INTRODUCTION

Food processing and production has now become the world's largest industry and is the most important industry to support human civilization. The field of food science and technology rely on using the concepts in basic sciences such as microbiology, chemistry and biochemistry, and apply them to discover ways to improve the quality, safety, nutrition, and value of the food supply. The department aims to train the students as food scientists and technologists equipped with chemical and biological fundamentals and engineering methodology for a comprehensive understanding of Composition and properties of foods, manufacturing, processing and preservation of food products, and biotechnological applications.

There was a time, when majority of the scientists, technologists, and production personnel in the food field did not have formal training in food science as it is recognized and considered mandatory today. This is because of less consumer awareness, less competitive food business environment and vague standardization, certification, legislation and trade rules. As a result, very few institutions offered a curriculum leading to a degree in food science. Many of these institutions were established along commodity lines, since the food industry demanded persons who received their original technical training in dairy science, meat science, cereal chemistry, vegetable crops, and horticulture. The Department was established in 1994 to cater to the need of the fast growing food industries in the country and also to meet the ever growing demand for food scientists & technologists in government, research and educational establishments. Prof. Dr. Rashda Ali is the founder and the first Chairperson of Food science and Technology. The department over the years has developed reputation of being one of the best in terms of its faculty, research, innovations, and industrial linkages. Our graduates are employed not only in national food industries but also in international food chains, industries, research organizations, universities and Government organizations.

Currently, the department offers 4 year BS, M.Phil. and Ph.D. programs. In near future we intend to launch Post graduate diploma in Food and nutrition and Food safety and quality in view of increasing demand of qualified and certified nutritionist and food safety inspector/officer.

Chairperson

Department of _____

University of Karachi

CRITERION-1

PROGRAMME MISSION, OBJECTIVES AND OUTCOMES

Criterion-1: Program Mission, Objectives and Outcomes

Institutional Mission

Our main institutional commitments include highly qualified and trained faculty, High quality education and research to ensure induction of required knowledge, skills and professional development of our graduates to meet the current demands of the industry as well as to understand and follow the emerging trends in Food Science & Technology

Program Mission Statement

Our mission is to provide high-quality education and training to students and prepare them for careers in the food industry, academia, or government, to conduct basic and applied research for the ultimate benefit of the food industry and consumers and to provide assistance and services to the food industry.

Documented measurable objectives to support mission statement

- 1- To produce qualified food technologists for Food industries, teaching and research organization.
- 2- To establish links between Teaching/ research institutions, government, commercial organizations and consumers.
- 3- To preserve, process and manipulate the agricultural crops to avoid post-harvest losses.
- 4- To protect our environmental condition from deterioration of food.
- 5- To introduce novel, nutrition's economic value added food products for local consumption and export.
- 6- To incorporate the food industry waste for new products development.
- 7- To provide consultancy and advisory services to food industries
- 8- To provide diagnostic analysis of food products.
- 9- To establish international collaboration with food science departments and food processing industries by exchanging of students & staff.
- 10- To organize programs for creating awareness about the importance of safe processed nutritious food.

Table: Program Objectives Assessment

S. No.	Objectives	How Measured	When Measured	Improvement Identified	Improvement Made
1.	To produce qualified food technologists for Food industries, teaching and research organization.	Industry and other employers' feedback	Nov 2019	Industrial trainings, invited lectures and industrial problems based projects	Graduates are able to get job soon after declaration result
2.	To establish links between Teaching/ research institutions, government, commercial organizations and consumers	Collaborative projects and research, advisory services	Nov 2019	Since its establishment the dept. is performing very well to achieve this objective	Since its establishment the dept. is performing very well to achieve this objective
3.	To preserve, process and manipulate the agricultural crops to avoid post-harvest losses.	Development in techniques/treatments	Nov 2019	Inadequate facilities like climate chamber etc.	Trying for funds from industry and university
4	To protect deterioration of food due to biological and environmental factors	Extended shelf life of vulnerable food	Nov 2019	Inadequate facilities like climate chamber etc.	Trying for funds from industry and university
5	To introduce novel, nutrition's economic value added food products for local consumption and export.	New products tried/developed in collaboration with industry	Nov 2019	Unavailability of kitchen facility and sensory lab	Trying for funds from industry and university
6	To incorporate the food industry waste in new and valuable products.	New products tried/developed from food waste	Nov 2019	Unavailability of kitchen facility and sensory lab	Trying for funds from industry and university
7	To provide consultancy and advisory services to food industries	Collaborative projects and research, advisory services	Nov 2019	Since its establishment the dept. is performing very well to achieve this objective	Since its establishment the dept. is performing very well to achieve this objective
8	To provide diagnostic analysis of food products	Industrial sample testing and consultancy	Nov 2019	Dept. is establishing a food testing lab in collaboration with Govt. of Sind to facilitate industry and consumers	Trying for funds from industry and university
9	To establish international collaboration with food science departments of foreign universities by exchanging students & staff.	Exchange programs with universities	Nov 2019	efforts were made to achieve this objective	Trying to establish more links with universities
10	To organize programs for creating awareness about the importance of safe processed nutritious food.	No. of Programs were arranged to achieve the purpose	Nov 2019	Several awareness programs have been arranged for general public, However frequency of programs affected due to pandemic	Webinars and videos and short lectures

Program Outcomes

After completion of the BS in Food Science & Technology, the students shall be able to:

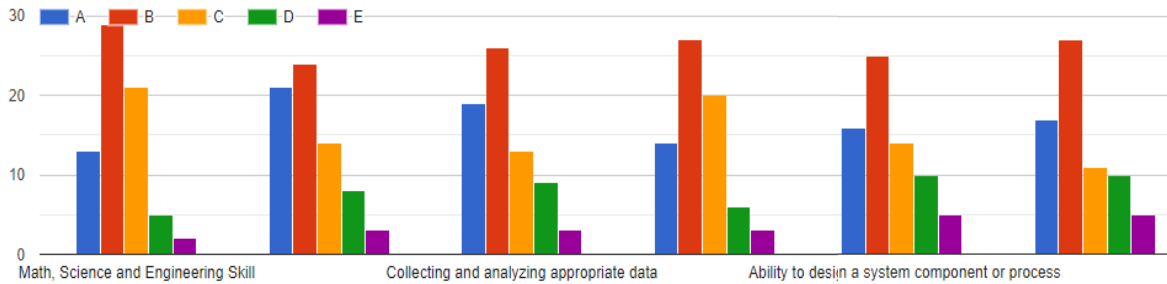
1. Understand food composition (including major chemical interactions and nutritional factors) in the context of food quality and safety
2. understand food processing, processing equipment and technology and operate quality assurance procedures in food processing
3. Understand the unit operations required to produce a given food product.
4. understand microbiological aspects of food quality and safety and participate in the assessment of a food production process by the use of techniques such as Hazard Analysis and Critical Control Points (HACCP) so as to ensure the production of safe and quality foods
5. Understand the basic principles of sanitation in food processing operations
6. Understand the properties, stability and uses of various food packaging materials.
7. Understand the requirements of waste management in food processing units
8. Understand the government laws and regulations required for the manufacture and sale of food products.
9. analyze and solve problems and apply knowledge to new problems
10. critically evaluate scientific literature, assess problems and design experiments to test hypotheses
11. plan, conduct, report and make presentations that effectively present the results of investigations carried out as an individual, in a small group or as part of a larger team
12. develop and perform chemical and physical, microbiological and sensory laboratory tests to assess the quality and safety of foods
13. participate in, and help develop, food research and food product development programs,
14. use information technology effectively

Results of program's assessment and the improvement in the program

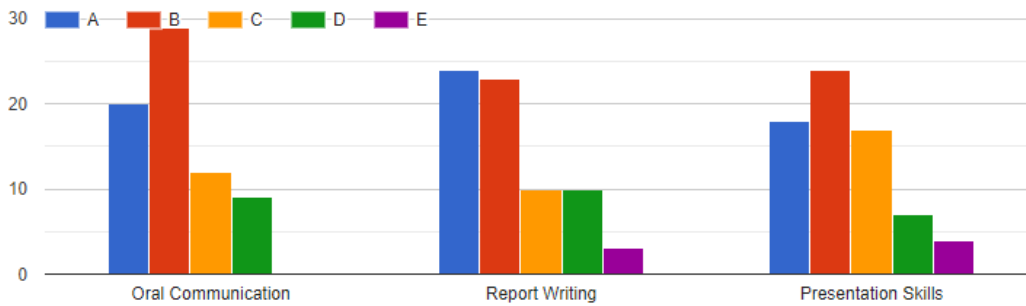
Results of Alumni Survey

A= Excellent, B=Very Good, C= Good, D=Fair, E=Poor

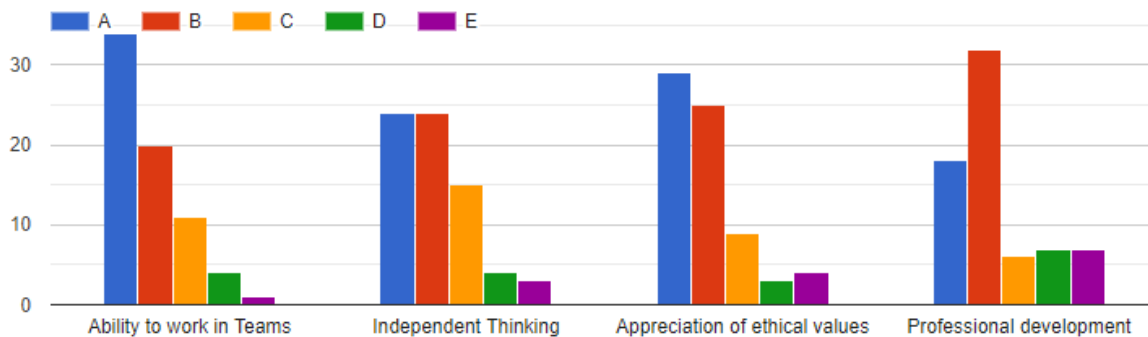
Knowledge



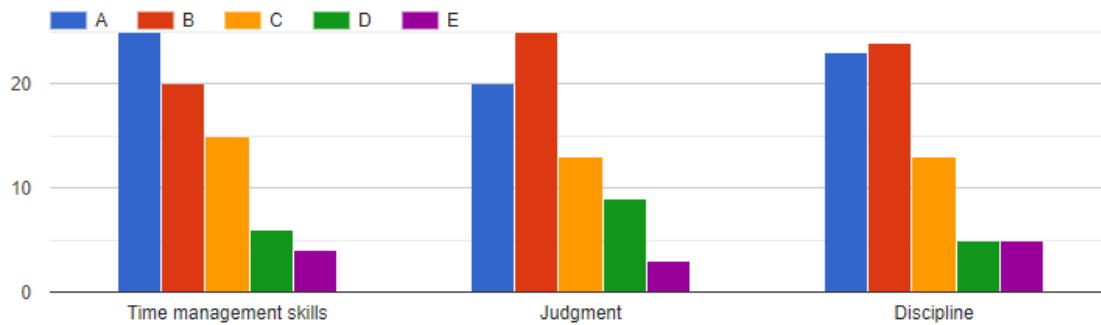
Communication Skills



Interpersonal Skill



Work Skills



Results of Faculty Survey

What are the best programs/ factors currently available in your department that enhance your motivation and job satisfaction?

6 responses

University provide freedom of research and teaching with rules and regulation. Every time new academic and research ideas highly supported from competent authorities.

Administrative support, collaboration with allied industries and support, job stability

We have collaboration with industries either its a industrial expert visit to depart or frequent student visits to industries,
Ongoing SFA project, and most importantly we have a listening and devoted chairperson

Co-operative and professional co-workers are the only motivation and inspiration. No specific program for teachers motivation and wellness is running in University.

Ph.D program

Job security

Suggest programs/ factors that could improve your motivation and job satisfaction?

6 responses

Some times financial issues cause hurdles in research. By improving research grant and contingencies many problems can be controlled.

In time promotion of the faculty

More practical work, courses modification, elective courses in final year.
Better understanding and respect among colleagues

A functional daycare center.
Prompt dispatch of Salary arrears and PhD allowance.
Frequent staff meetings.

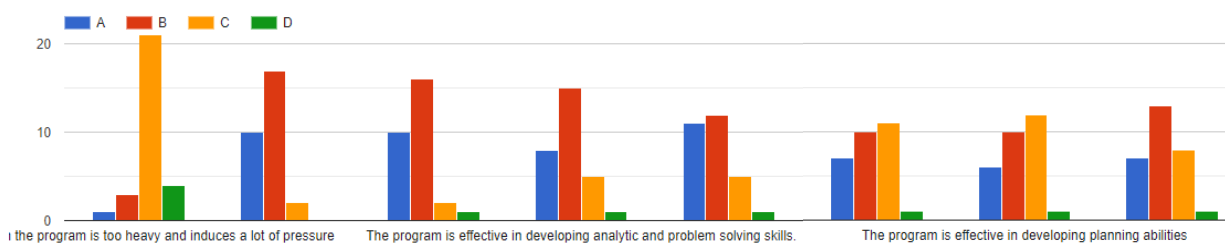
Timely promotions, incentives for research, Fundings for research and travel for attending conferences must be given to faculty members.

A clear, transparent and most important timely promotion can greatly motivate

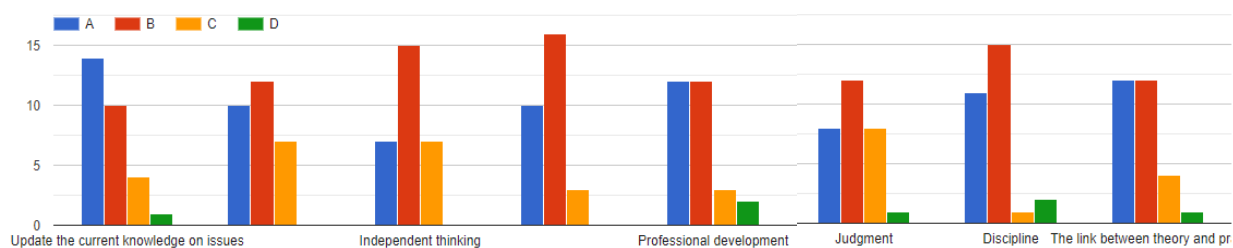
Results of Graduating Students Survey

A= Strongly Agree, B=Agree, C= Disagree, D=strongly disagree

Knowledge



10) The Seminars and Workshops organized by the department help



a) Strengths and Weaknesses of the Program

i) Strengths:

- 1-100% PhD faculty, 50% having experience of research and/ or training in Foreign reputed universities or institutes
- 2- Dedicated classrooms with multimedia and or smart TVs
- 3- Well established and functional labs
- 4- Three seminar/lecture halls for seminars/short courses and panel discussions
- 5-well organized lectures, lab manuals
- 6-Compulsory internship
- 7-Compulsory research project in final year based on industrial problem or product development
- 8- Industrial visits related to the courses taught in 3rd and 4th year

ii) Weaknesses

- 1- Separate computer lab
- 2- Unavailability of computers in the seminar library
- 3- Unavailability of pilot plant facility

b) Future Development Plans

- 1- Separate computer lab
- 2- Computers and internet facility in the seminar library
- 3- Pilot plant facilities
- 4- Auditorium
- 5- Extend lab facilities-establish lab for sensory analyses
- 6- promote community services
- 7- A separate Degree program-BS in Food and Nutrition is to be launched

Standard 1-4: The department must assess its overall performance periodically.

a) Student Enrolment

S. No	Year	Degree		
		BS (MP +EP)	M.Phil	Ph.D.
1	2016	46 + 45	11	1
2	2017	46 + 38	7	1
3	2018	26 + 48	9	-
4	2019	45 + 53	15	-
5	2020	43 + 56	22	2

- b) Student/Faculty Ratio (15:1)
- c) i) Time for Bachelors (4 years)
- ii) Time for M.S (2-3 years)
- iii) Time for Ph.D (2 years)

d) The average student grade point (CGPA) 3.2

e Student/Faculty Satisfaction

Faculty:

Faculty is satisfied with

- 1- Job facilities and environment
- 2- Progress opportunities
- 3- Curriculum design, admission and examination policies

Faculty is unsatisfied with

- 1- Computer and internet facilities
- 2- Lab running grants
- 3- Unavailability of pilot plant facilities
- 4- Unavailability of sensory lab for testing new products trials
- 5- Unavailability of animal house for toxicological studies and in vivo trials

CRITERION-2
CURRICULUM DESIGN AND ORGANIZATION

Criterion-2: Curriculum Design and Organization
Program of Studies offered

Year / Semester wise Scheme of Studies of BS -Food Science & Technology Program
1st Year (Semester I)

First Year-First Semester

S.No.	Course #	Course Title	Credit Hours
1.	311	Food Chemistry	2 + 1
2.	301	General Chemistry	2 + 1
3.	303 (F.M)/ (Bio)	Sub-II Functional Maths (<i>Compulsory</i>) (for the students of <i>Biological Sciences</i>) Biology (<i>Compulsory</i>) (for the students of <i>Physical Sciences</i>)	3 + 0
4.	300.1 (I.S)	Islamic Studies (<i>Compulsory</i>)	3 + 0
5.	300.1 (E)	English (<i>Compulsory</i>)	3 + 0

First Year-Second Semester

S.No	Course #	Course Title	Credit Hours
1.	312	Food Engineering I (Unit Operations)	2 + 1
2.	304	Sub-I – Physics-I	2 + 1
3.	306 (F.M)/ (Bio)	Sub-II Functional Maths (<i>Compulsory</i>) (for the students of <i>Biological Sciences</i>) Biology (<i>Compulsory</i>) (for the students of <i>Physical Sciences</i>)	3 + 0
4.	300.2 (P.S)	Pakistan Studies (<i>compulsory</i>)	3 + 0
5.	300.2 (U)	Urdu/Sindhi/Natural Science (<i>compulsory</i>)	3 + 0

Second Year-Third Semester

S.No	Course #	Course Title	Credit Hours
1.	411	Food Engineering II (Fluid Mechanics)	2 + 1
2.	413	Food Biochemistry	2 + 1
3.	403	Math I	3 + 0
4.	405	Physics II	2 + 1
5.	400.1 (E)	English-II	3 + 0

Second Year-Fourth Semester

S.No	Course #	Course Title	Credit Hours
1.	412	Food Engineering III (Heat Transfer)	2 + 1
2.	414	Food Microbiology	2 + 1
3.	402	Statistics	3 + 0
4.	404	Math II	3 + 0
5.	400.1 (E)	Computer Applications (<i>Compulsory</i>)	2 + 1

Third Year-Fifth Semester

S.No	Course #	Course Title	Credit Hours
1.	501	Introduction to Social Sciences	3 + 0
2.	511	Food Enzymology	2 + 1
3.	513	Nutrition	2 + 1
4.	515	Food Fermentation	2 + 1
5.	517	Fruits, Vegetable, Herbs & Spices	2 + 1
6.	519	Post Harvest Technology	2 + 1

Third Year-Sixth Semester

S.No	Course #	Course Title	Credit Hours
1.	502	Communication Skills	3 + 0
2.	510	Food Quality Assurance Mangement	2 + 1
3.	512	Dairy Industries	2 + 1
4.	514	Food Engineering IV (Drying & Evaporation)	2 + 1
5.	516	Sweeteners and Sugars	2 + 1
6.	518	Cereal Technology and Baking	2 + 1

Fourth Year-**Seventh Semester**

S.No	Course #	Course Title	Credit Hours
1.	601	Industrial Economics & Management (<i>Compulsory</i>)	3 + 0
2.	611	Sea Food Processing	2 + 1
3.	613	Fats and Oils	2 + 1
4.	615	Chocolate and Confectionery	2 + 1
5.	617	Food Additives	2 + 1
6.	619	Packaging Technology	2 + 1

Fourth year-**Eighth Semester**

S.No	Course #	Course Title	Credit Hours
1.	602	Community Development (<i>Compulsory</i>)	3 + 0
2.	610	Food Laws and Food Safety	3 + 0
3.	612	Beverage Industry	2 + 1
4.	614	Food Engineering VI (Mixing, Extraction & Sieving)	2 + 1
5.	616	Meat, Poultry and Egg	2 + 1
6.	618	Research Project and Industrial Training	0 + 3

Standard 2-1: The Curriculum must be consistent and support the program’s documented objectives

The following table manifests how the program content (Courses) meets the Program Objectives.

Courses	Program’s Objectives									
	1	2	3	4	5	6	7	8	9	10
Major Courses	311,312 411, 412 413, 414 All 3 rd yr All 4 th yr	502 510 602 610	519 601 619	519 601 619 610	513 618	501	618	311 414 502	618	400
Elective Courses	None									
Practical (Field and Lab)	311,312 411, 412 413, 414 All 3 rd yr All 4 th yr	502 510 602 610	519 601 619	519 601 619 610	513 618	501	618	311 414 502	618	400
Thesis/Dissertation (618)	Depending on the field of research, objectives are met invariably									

Standard 2-2: Theoretical background, problem analysis and solution design must be stressed within the program’s core material.

The following table indicates the elements covered in core courses:

Elements	Courses
i) Theoretical Background	All courses offered by the Department
ii) Problem Analysis	Food microbiology, Quality Food quality assurance, Ind. Methods of food preservation, Food additives and Food laws Internships/Thesis/Dissertation
iii) Solution Design	All courses of 3 rd and 4 th year Internships/Thesis/Dissertation

Standard 2-3: The curriculum must satisfy the core requirements for the program, as specified by the respective accreditation body.

&

Standard 2-4: The curriculum must satisfy the major requirements for the program, as specified by the respective accreditation body/council.

The curriculum adopted by the department of Food Science & Technology has been approved by the statutory bodies of the university –Board of Studies of the Department, Board of Faculty of the Department and Academic Council

The curriculum has been designed in accordance with the guidelines of HEC.

2-5: The curriculum must satisfy the general education, arts and other discipline requirements for the

Program as specified by the accreditation body.

Program	General Education	Basic Sciences Discipline requirements
BS	Islamic studies Pakistan studies Urdu English Communication skills	General Chemistry Physics Maths Statistics Computer applications Functional Math Functional Biology Industrial economics and Management

Standard 2-6: Information technology component of the curriculum must be integrated throughout the program.

Information technology component of the curriculum is covered by the course entitled “Computer Applications taught in fourth semester of the program. Besides this, information technology is used in most of the courses for surveys, presentations, data managements and statistical analyses.

Standard 2-7: Oral and written communication skills of the student must be developed and applied in the program.

In addition to the one complete course of communication skills in third semester, assigned presentations, internship reports, project reports and viva in practical exams help developing communication skills

CRITERION-3
LABORATORY AND COMPUTING FACILITIES

CITERION-3: Laboratory and Computing Facilities

Laboratory Facilities

1- Food Engineering Lab

Spectrophotometer, Rotary evaporators, Distillation units, water baths, Spray dryer, Texture analyser, centrifuge machines, hot plates, digital balances, Microwave oven, Heating Mantle, Analytical balance, Ovens, pH Meter, Sonicator, DSC

2- Food Processing Lab

Spectrophotometer, Rotary evaporators, Distillation units, water baths, centrifuge machines, hot plates, digital balances, Microwave oven, Heating Mantle, Analytical balance, Ovens, pH Meter

3- Food Biochemistry and Dairy Lab

Rotary evaporators, Distillation units, water baths, centrifuge machines, hot plates, digital balances, Microwave oven, Heating Mantle, Gerber Machine, Analytical balance, Ovens, pH Meter.

4- Sugar and Seafood Lab

Spectrophotometer, Rotary evaporators, Distillation units, water baths, centrifuge machines, hot plates, digital balances, Microwave oven, Heating Mantle, Analytical balance, Ovens, pH Meter

5- Waste management Lab

Rotary evaporators, Distillation units, water baths, centrifuge machines, hot plates, digital balances, Microwave oven.

6- Food Analysis Lab

HPLC, Spectrophotometer, Rotary evaporators, Distillation units, water baths, centrifuge machines, hot plates, digital balances, Microwave oven, Heating Mantle, Analytical balance, Ovens, pH Meter (Non-Functional), Sonicator

7- Food Chemistry Lab

Atomic absorption, Freeze Dryer, humidity chamber, Bomb calorimeter, Rotary evaporators, Distillation units, water baths, centrifuge machines, hot plates, digital balances, Microwave oven, Heating Mantle, Analytical balance, Ovens, pH Meter (Non-Functional), Sonicator,

Stability Chamber

8- Food Microbiology and Fermentation Lab

Incubator, Autoclave, Hot plate, microscope, vaccum pump, weighing balance

9- Nutrition Lab

Water baths, centrifuge machines, hot plates, digital balances, Microwave oven, Heating Mantle, Analytical balance, Ovens

Computer Facilities

The department lack computer lab and adequate internet facilities for students

Internet Facility

The internet facility is available through main communication network of university under the umbrella of PERN, HEC

However due to unavailability of computers internet facility is not available for students

Standard 3-1: Laboratory manuals/ documentation instruction for experiments must be available and readily accessible to faculty and students

Laboratory manuals/ documentation instruction for experiments are readily available and accessible to faculty and students

Standard 3-2: There must be adequate support personnel for instruction and maintaining the laboratories.

Though support staff is available but they are not trained. A request will be made to university administration for the qualified and trained staff for the proper maintenance of the laboratories

Standard 3-3: The University computing infrastructure and facilities must be adequate to support program's objectives

i) Computing Facilities

The department lack in computing facilities

ii) Multimedia

4 classrooms /hall in the department have multimedia, two of them need repair and service

iii) Website

The university website [http:// www.uok.edu.pk](http://www.uok.edu.pk) has a link for department of Food Science & Technology as <https://uok.edu.pk/faculties/foodscience/index.php>

iv) Internet

The internet facility is available through main communication network of university under the umbrella of PERN, HEC

However due to unavailability of computers internet facility is not available for students

CRITERION-4
STUDENT SUPPORT AND ADVISING

Criterion-4: Student Support and Advising

A departmental student advisor (nominated by the chairperson of the Department) is appointed by the Vice Chancellor to assist and guide students. Furthermore, support, guidance, and mentoring are given by all faculty members informally. Students can openly discuss their issues with any staff member comfortably. In addition, we have student council office at university level under the guidance of University Student Advisor.

Standard 4-1: Courses must have been offered with sufficient frequency and number for students to complete the program in a timely manner.

Program	Classes per Week	Practical Classes per Week	Research Guidance
BS	10 classes total 2 classes for each course	5 labs total 1 lab of each course	Students discuss their research design and plans according to the availability of their supervisors At least 5 hours /week

Standard 4-2: Course in the major must be structured to ensure effective interaction between students, faculty and teaching assistants.

Currently, there are no course choices in the curriculum, it needs to be revised to offer choices

Standard 4-3: Guidance on how to complete the program must be available to all students and access to academic advising must be available to make course decisions and career choices

The Departmental Student Advisor is available to guide all students in their career choices and help the students by providing information regarding career opportunities available for them. The opportunities of job, membership in technical and professional societies are notified on the departmental Notice Board by the Chairperson of the Department. In addition, we have student council office at university level under the guidance of University Student Advisor.

CRITERION-5
PROCESS CONTROL

Criterion-5: Process Control

Standard 5-1: The process by which students are admitted to the program must be based on quantitative and qualitative criteria and clearly documented. This process must be periodically evaluated to ensure that it is meeting its objectives.

The admission policy is well documented, centralized and is according to the rules and criteria set by HEC. For this purpose, an advertisement is published in the National News Papers by the Registrar Office. Admission criteria for BS –Food Science & Technology are H.S.C. pre medical or pre engineering with minimum second division and entry test. Admission is granted on merit basis, a merit list of student fulfilling the admission criteria is prepared and admission is granted on the basis of available seats. Admission criteria are reviewed every year and revised (if necessary).

Standard 5-2: The process by which students are registered in the program and monitoring of students progress to ensure timely completion of the program must be documented. This process must be periodically evaluated to ensure that it is meeting its objectives.

The name of the student, after completion of the admission process, is forwarded to the department. The registration number is allotted to every student by enrolment section. Students are evaluated through theory and practical exams and assignments or presentations as well. As, internship and research projects are compulsory in the final year, final year students evaluation is also based on internship and project reports. Marking and grading rules are being followed as per guidance of the semester examination section, University of Karachi.

Standard 5-3: The process of recruiting and retaining highly qualified faculty members must be in place and clearly documented. Also processes and procedures for faculty evaluation, promotion must be consistent with institutional mission statement. These processes must be periodically evaluated to ensure that it is meeting with its objectives.

The university's recruiting strategy is the same as that recommended by the HEC. In national newspapers, vacant and newly created vacancies are advertised, applications are received by the Registrar's Office, scrutinized by the Scrutiny Committee, and call letters are given to short-listed applicants on the basis of the University Authority's expertise, credentials, publications and other qualifications/activities. Applicants are interviewed by the University Selection Board and applicants are selected on merit basis.

The Syndicate approves the selection of candidates for the issuance of orders for joining within a specified period. The recruitment of new candidates depends on the number of vacancies accepted. The HEC-set criteria are met. There is no process at present for retaining highly skilled members of the faculty. The revised pay scale framework, however, is quite appealing. HEC also supports the appointment of highly qualified members as professors from abroad, national professors and deputy professors in the university departments concerned.

Faculty Recruitment / Retaining Policy

As per Karachi University Rules/HEC Criteria

Appointments / Promotions Procedure:

Faculty is appointed and promoted as per Karachi University rules/ HEC Criteria

Basic Pay Scale (BPS)

BPS	18
BPS	19
BPS	20
BPS	21

a. Lecturer (BPS- 18):

Minimum Qualification

As per Karachi University Rules/HEC Criteria

b. Assistant Professor (BPS- 19):

Minimum Qualification

As per Karachi University Rules/HEC Criteria

c. Associate Professor (BPS- 20)

Minimum Qualification

Experience

Minimum Number of Publications

As per Karachi University Rules/HEC Criteria

d. Professor (BPS-21)

Minimum Qualification

Experience

Minimum Number of Publications

Bases for Appointments / Promotions

As per Karachi University Rules/HEC Criteria

Standard 5-4: The process and procedure used to ensure that teaching and delivery of course material to the students emphasizes active learning and that course learning outcomes are met. The process must be periodically evaluated to ensure that it is meeting its objectives.

We pursue a semester scheme. Student success and comprehension are tested at the end of each semester exam by reviewing exam copies. In order to provide high quality instruction, the department frequently reviews the curriculum with respect to advancement in the field. New courses are added with the advent of new sectors and included in the curriculum. In order to ensure active learning and compatibility of the course with its objectives, students are provided with course outlines, course materials, and list of references at the beginning of the semester. Further, different teaching aids like overhead projectors, slides, and multimedia and smart TVs are used to deliver the conceptual contents. Fixed Schedule/ time table is followed by all faculty members, Chairperson of the department regularly gets feedback about the regularity of classes and labs from the students during the semester, progress is also checked periodically at staff meetings.

Standard 5-5: The process that ensures that graduates have completed the requirements of the program must be based on standards, effective and clearly documented procedures. This process must be periodically evaluated to ensure that it is meeting its objectives.

The department ensures that the students are punctual and fulfill the attendance requirement i.e. 75%. Exams are scheduled within the dates marked in the academic calendar. The students are marked and graded and the results are sent to semester examination section (SEC). SEC declares the final result. Promotion to the next class is restricted to only those who have cleared more than 80% courses. For each course, the minimum pass marks are 40%. The annual convocation held every year to award degrees to successful students.

CRITERION-6

FACULTY

Criterion-6: Faculty

Standard 6-1: There must be enough full time faculty who are committed to the programme to provide adequate coverage of the programme areas / courses with continuity and stability. The interest of all faculty members must be sufficient to teach all courses, plan, modify and update courses. The majority must hold a Ph.D. degree in the discipline.

All 10 faculty members are Ph.D. and are engaged in teaching diverse courses covering broad range of topics. Though the teachers prefer to teach courses of their interest, they can teach all courses and take keen interest in planning, modifying and updating courses.

Standard 6-2: All faculty members must remain current in the discipline and sufficient time must be provided for scholarly activities and professional development. Also, effective programs for faculty development must be in place.

Sufficient academic facilities are available for the faculty members including internet access, through local area network provided by university via PERN, online subscription to research journal and books related to food science & technology. Research facilities are also available, however funds are insufficient for the maintenance labs. Continuing education programs must be in place for the professional development and progress of faculty.

Standard 6-3: All faculty members should be motivated and have job satisfaction to excel in their profession.

Faculty is partially satisfied with current job circumstances as they have been waiting for a long time in order to be promoted to next cadre, even if they deserve promotion which leads to frustration rather than motivation.

CRITERION-7
INSTITUTIONAL FACILITIES

Criterion-7: Institutional Facilities

Standard 7-1: The Institution must have the infrastructure to support new trends in learning such as E-learning.

a) Departmental library and Internet Facility

Departmental library has around 900 books. Effort is being made to acquire latest books. Subscription of at least four international journals of Food Science is required. The faculty has access to an e-library as provided by PERN that is very useful for high-quality education and producing international level research but the internet facilities do not exist for students which needs immediate attention and action.

Standard 7-2: The library must possess on up-to-date technical collection relevant to the program and must be adequately staffed with professional personnel.

Departmental library has around 900 books which are quite relevant to the program, but there are very few books, journals, and periodicals in the University Central Library relevant to the field of Food Science & Technology. Also in terms of space services and, management the central library does not meet the standard of a university library.

Standard 7-3: Class rooms must be adequately equipped and offices must be adequate to enable faculty to carry out their responsibility.

The department has 7 classrooms/halls fully equipped with multimedia and /or smart TVs. Every faculty has its own furnished office with internet facilities, however they are not provided computers.

CRITERION-8
INSTITUTIONAL SUPPORT

Criterion-8: Institutional Support

The administration of the university has been struggling hard to improve all departments and update departments and set up new faculties and institutes. The university aims to recruit highly skilled professors as well.

Standard 8-1: There must be sufficient support and financial resources to attract and retain high quality faculty and provide the means for them to maintain competence as teacher and scholars.

In order to manage the department, the department currently has limited resources. Moreover, since the last two years, the department has not received adequate amount in term of grant from the university, leading the department to lack of inspiration, passion, devotion and commitment. There is a desperate need for a clear budget to be fixed to streamline the department. The financial support that would be provided to the department will be used to develop computer facilities. In addition, in order to attract and retain high quality faculty, promotion to next cadre according to qualification, experience, academic achievements should be given priority.

Standard 8-2: There must be an adequate number of high quality graduate students, research assistants and Ph.D. Students

Degree Program	Years					
	2015	2016	2017	2018	2019	2020
B.S	78	91	84	74	98	99
M.Phil	12	11	7	9	15	22
Ph.D	1	1	-	-	2	2
Research/ Teaching Assistants						

Student/Faculty Ratio (for the last three years)

15:1

Standard 8-3: Financial resources must be provided to acquire and maintain library holding, laboratories and computing facilities.

As previously stated, there is a shortage of financial support to better manage the seminar library and research labs.

Faculty CVs

Prof. Dr. Abid Hasnain
Ex-Chairman, Department of Food Science & Technology

- Associated with the Department of Food Science & Technology since 1985
- Published numerous research papers in reputed national and international journals
- Supervised numerous M.Phil and Ph.D students
- Member PSFST
- Presented research work in various national and international conferences and had conducted Halal Food Management System workshops, seminars and symposium on International level.

Core Courses: Food packaging, Advanced food packaging, Cereal technology and Advanced cereal technology

Prof. Dr. Syed Asad Sayeed
Ex-Chairman, Department of Food Science & Technology

- Associated with the Department of Food Science & Technology since 1988
- Published numerous research papers in reputed national and international journals
- Supervised numerous M.Phil and Ph.D students
- Member PSFST, Chemical society of Pakistan
- Postdoc from Germany
- Presented research work in various national and international conferences and had conducted Halal Food Management System workshops, seminars and symposium on International level.

Core Courses: Quality control, Technology of fats and oils, Food chemistry and Fruits, vegetables, herbs & spice

Prof. Dr. Jehan Ara

Ex-Chairperson, Department of Food Science and Technology

- Associated with the Department of Food Science & Technology since 1998
- Published numerous research papers in reputed national and international journals
- Presented research work in various national and international conferences and had conducted Halal Food Management System workshops, seminars and symposium on International level.
- Supervised numerous M.Phil and Ph.D students

Core Courses: Post-harvest technology, Advanced post-harvest technology and Nutraceuticals, Meat, poultry & eggs

Dr. Shahina Naz

Chairperson, Department of Food Science and Technology

- Associated with the Department of Food Science & Technology since 1998
- Published numerous research papers in reputed national and international journals
- Certified lead auditor of FSSC 22000 and PNAC approved assessor of ISO 17025
- Supervised numerous M.Phil and Ph.D students
- Postdoc from US and UK
- Member PSFST and Chemical Society of Pakistan
- Presented research work in various national and international conferences and had conducted Halal Food Management System workshops, seminars and symposium on International level.

Core Courses: Food processing & preservation, Beverage technology, Advanced food chemistry, Advance sensory analysis and Meat, poultry & eggs

Dr. Rehmanullah Siddiqui

Ex-Student Advisor, Department of Food Science and Technology

- Associated with the Department of Food Science & Technology since 1994
- Published numerous research papers in reputed national and international journals
- Certified lead auditor of FSSC 22000 and PNAC approved assessor of ISO 17025
- Member PSFST and Chemical Society of Pakistan
- Presented research work in various national and international conferences and had conducted Halal Food Management System workshops, seminars and symposium on International level.

Core Courses: Food processing & preservation, Beverage technology, Advanced food chemistry, Meat, poultry & eggs

Dr. Feroz Alam

Ex-Student Advisor, Department of Food Science and Technology

- Associated with the Department of Food Science & Technology since 2005
- Published numerous research papers in reputed national and international journals
- Presented research work in various national and international conferences and had conducted workshops, seminars and symposium on International level.

Core Courses: Food chemistry, Food engineering and Advanced dairy technology

Dr. Abdual Haq
Assistant Professor

- Post-Doc Scholar from Institute of Chemistry, Chinese Academy of Sciences Beijing, China (2015-2017).
- Post-Doc Scholar from Department of Chemistry and Chemical Engineering, Kagoshima University, Kagoshima, Japan (2017-2019).
- Fellow of the Japanese Society of Promotion of Science (JSPS) Japan (2017)
- Received Australia Awards-Endeavour 2018 Research Fellowships Postdoctoral Research, (*winner of*) Australia
- Received best Presentation Award Institute of Chemistry, Chinese Academy of Sciences, Beijing, China.
- Received CAS President's International Fellowship Initiative Award, Institute of Chemistry, Chinese Academy of Science, Beijing, China.
- Received TÜBİTAK Research Fellowship Program for International Researchers, (*winner of*) Turkey (2015)
- Associated with the Department of Food Science & Technology since 2013
- Published numerous research papers in reputed national and international journals

Core Courses: Quality control, Food biochemistry and Post-harvest technology

Dr. Tahira Mohsin
Assistant Professor

- Associated with the Department of Food Science & Technology since 2013
- Published numerous research papers in reputed national and international journals
- Presented research work in various national and international conferences and had conducted workshops, seminars and symposium on International level.
- Supervised number of M.Phil and PhD students.
- Editorial board member of International Journal “Legume Science”, John Wiley & Sons, for two years 2019 and 2020.
- Editorial board member of International Journal “Journal of Raw Materials to Processed Food”.(Published from Cukorova University, Turkey)
- Editorial board member of International Scientific and Technical Journal “Innovation, Technical and Technology”. (Published from Tashkent State Technical University, Tashkent, Uzbekistan).
- Workshop on “ Polymerase Chain Reaction” at Centralized Science Laboratory, University of Karachi on 7th March, 2019.
- Training Course on “Awareness and Internal Auditing on BRC Standard” held on 7th to 8th May, 2018 organized by Bureau Veritas held at Latif Ebrahim Jamil Training Centre, University of Karachi.
- 3 day workshop on “Biosafety and Biosecurity: An advanced risk mitigation training programme” organized by Health Securities Partner, KIBGE, Behavioral Based Improvement Solutions, Pakistan Biological Safety Association held on 4th to 6th August 2017 at Dr. AQ Khan Institute of Biotechnology and Genetic Engineering (KIBGE), University of Karachi.
- Seminar on “Entrepreneurship” organized by ORIC University of Karachi on 23rd Feb, 2016
- Seminar on “ Prospective graduate students and Enrolled Research Fellows” organized by Office of Research, Innovation and Commercialization, University of Karachi, on 23rd June, 2014.
- Workshop on “Self Assessment Programme/Report” held at Arts Auditorium, University of Karachi 16th to 17th January, 2014.
- Workshop on “Total Quality Management” from 18th to 20th Feb, 2014 organized by Sardar Yasin Malik Professional Development Facilities, University of Karachi.
- Training on “Pedagogical Training of PGDC staff at University of Karachi” organized by Trade Related Technical Assistance Programme (TRTA II) from 19th to 20th November, 2013, Karachi.

Core Courses: Chocolate & confectionary, Food engineering, Fluid mechanics and Research methodology

Dr. Zubala Lutfi
Assistant Professor

- Associated with the Department of Food Science & Technology since 2015
- Published numerous research papers in reputed national and international journals
- Presented research work in various national and international conferences and had conducted workshops, seminars and symposium on International level.

Core Courses: Food chemistry, Food & nutrition and Food biochemistry

Dr. Syed Muhammad Ghufraan Saeed

Assistant Professor, Department of Food Science and Technology

- Currently serving as a member board of governance, member scientific panel and member technical committee of Sindh Food Authority, Pakistan.
- Member of PSQCA Pakistan for Committee of Halal Food Management System PS3733 and Halal CBs PS4992.
- Received training in 37th palm oil familiarization program (POFP 2017), Putrajaya, Malaysia.
- Received research based training from Department of Food Bioscience, Reading University, UK (2009)
- Had worked as an Assistant manager in the Department of Agricultural Services at SGS, Pakistan (2012-2015)
- Certified lead auditor of FSSC 22000 and PNAC approved assessor of ISO 17025
- Certificate in ISO 17025 Qualified Assessor, ISO/IEC/17025:2005 and APLAC Guide TR 001 by Pakistan National Accreditation Council (PNAC).
- Certificate in FSSC 22000:2010 Auditor/lead Auditor Training Course, Combining ISO 22000:2005 and ISO/TS 22002-1:2009. SGS/SSCE/FSMSLAC/512132/P/4463
- Associated with the Department of Food Science & Technology since 2015
- Presented research work in various national and international conferences and had conducted Halal Food Management System workshops, seminars and symposium on International level (in UK, New Castle, Dubai, Hong Kong, Malaysia and Pakistan).
- Supervised number of M.Phil students.
- Published numerous research papers in reputed national and international journals

Core Courses: Quality assurance, Fermentation technology, Food processing & preservation, Advanced food chemistry, Technology of fats & oils, Beverage technology and Functional biology.

Dr. Lubna Mobin
Assistant Professor

- Almost 10 years of Academic teaching experience
- 12 Research Papers published so far in national and international journals
- Workshop: Entrepreneurship Teaching Pedagogy , Aman Centre, IBA Karachi (2016)
- Training Course: HACCP in the Seafood Industry Marine Fisheries Department, Govt. of Pakistan (2013)
- Workshop : An Introduction to Statistical Analysis and Tools Faculty of Arts, University of Karachi (2011)

Core Courses: Functional biology, Food microbiology and Advance food chemistry Advance Food toxicology, Advance sensory analysis and Food engineering

Dr. Anjum Nawab
Assistant Professor

- 10 Research Papers published so far in national and international journals
- Associated with the Department of Food Science & Technology since 2015
- Presented research work in various national and international conferences and had conducted workshops, seminars and symposium on International level.

Core Courses:

Food Enzymology, Food Nutrition, Meat Poultry and Egg

Dr. Abeera Moin
Assistant Professor

- Supervised 6 M.Sc projects
- Participated in Planning, Execution and Successful Accomplishment of Research Degrees workshop held at Dr. A. Q. Khan Institute of Biotechnology and Genetic Engineering (KIBGE) (2014).
- Presented Food and Cancer link at a cancer awareness seminar organized by Helping Hands Trust on World Cancer day (2014).
- Participated in Pakistan Aquaculture and Fisheries Society Annual Conference held at National institute of Oceanography (2013).
- Certificate in Halaal lead auditor course organized by Halaal foundation and Department of Food Science and Technology.
- Attended National workshop on Chemical and Biological Safety organized by H.E.J. Research institute of Chemistry, ICCBS, University of Karachi, in collaboration with NAYS, Pakistan and American society of Microbiology.
- Certificate in Food safety: An introduction to prerequisite programs, GMP and HACCP Offered by Pakistan – Afghanistan – USA – Tri lateral Commission
- Certificate in HACCP in sea food industry by Marine fisheries department, Ministry of live stock and dairy development, Government of Pakistan.
- Certificate in Quality management system for food industry (ISO 22000) from iForum.

Core Courses: Quality assurance, Chocolate & confectionary and Dairy technology

Dr. Marium Sheikh

Assistant Professor

- 7 Research Papers published so far in national and international journals
- Associated with the Department of Food Science & Technology since 2015
- Training on “Introduction to statistical analysis and Tools”, Organized by University of Karachi.
- Workshop on “Pedagogical training of PGDC staff at University of Karachi, organized by “Trade Related Technical Assistance”, International Trade Centre, (ITC), World Intellectual Property Organization (WIPO) from 19-11-13 to 20-11-13.
- Training on “Course on Practical Inspection of Food and Fisheries Establishments including the use of Food Inspection Kits, organized by “Trade Related Technical Assistance”, International Trade Centre, (ITC), World Intellectual Property Organization (WIPO) from 21-11-13 to 22-11-13.
- Planning, Execution and Successful Accomplishment of Research Degrees.
- Seminar on “First Halal Science” organized on 12-10-10 at Sheikh Zaid Islamic Research Centre, University of Karachi.
- Workshop on “Nutraceutical Foods” organized on 13-4-10 at University of Karachi.
- National workshop on chemical and biological laboratory safety organized by HEJ-Research Institute, ICCBS, University of Karachi. (September 23-24, 2014).

Core Courses: Cereal technology, Packaging technology and Post-harvest technology