PROSPECTUS
Post Graduate Diploma in
Food Safety and Controls

Under
European Union’s Funded Trade Related Technical Assistance (TRTA II) Program

Implemented by
United Nations Industrial Development Organization (UNIDO)

association with
International Trade Centre (ITC)

&
World Intellectual Property Organization (WIPO)

University of Karachi
2014
Access by developing countries to food export markets will depend on their capacity to meet the regulatory requirements of importing countries. For most developing countries, like Pakistan, agriculture lies at the centre of their economies and food exports are a major source of foreign exchange and income generation for rural and urban workers in agriculture and agro-industrial sectors. The long-term solution for developing countries to sustain a demand for their products in world markets lies in building up the trust and confidence of importers in the quality and safety of their food supply systems. This requires improvement within national food safety and control systems and within industry food quality and safety programs. Such efforts will greatly help in increasing the relatively small share of developing countries in the international food trade.

Realizing the importance of food security and safety in Pakistan, the Department of Food Science & Technology has timely taken the initiative to launch one-year postgraduate Diploma Food Safety and Controls with the support of EU funded TRTA II program. The courses that have been designed for the diploma will be taught by the experienced and highly qualified faculty of the department as well as the international experts. The technical training imparted to the candidates would help expanding the food industry both by value addition as well as improving quality protocols by developing credible traceability and certification models to deal with SPS issues, which at present is lacking due to the absence of a legal framework.

I admire the earnestness, sincerity and sheer hard work of the faculty of the Department of Food Science & Technology, blended with the support and guidance of international experts of the food science discipline that have brought cherished rewards in form of this internationally recognized postgraduate diploma.

I congratulate the Chairman and faculty of the Department for their joint endeavors for a successful higher education programs and express my sincere gratitude to the management of EU funded TRTA-II Program and the implementing agency UNIDO as well as the international experts Dr. Ian Golding and Dr. Andrew Mathieson for their contributions, participations and efforts to make the program a success. I assure the university’s support in their quest of making food safety professionals for the country.
The tremendous advances in trade and export in the west are partly due to the ability of the advanced countries to integrate scientific knowledge and research with the economic activities. One of the high priority areas which pursued seriously is food production in compliance with food safety standards and regulations. The consumer societies of the developed countries practice their legal rights to get the quality food and drugs. They usually also have concerns about the environmental impact or the trading ethics of the product, they consume. Consequently, there is an emergent need to adopt global standards for the maintenance of quality and safety of food.

Unfortunately, Pakistan though rich in agriculture produce, is still not in a position to claim compliance with the food safety standards. Current legislation and institutional framework for official controls of food safety, animal and plant health are inadequate and not sufficiently coherent to address the problems faced by Pakistan’s food sector. To overcome these problems and to develop a harmonized food safety control system in Pakistan, three renowned public sector universities of Pakistan have come forward to launch Food Safety Diploma Course at the national level. This project is financially supported by European Union’s Trade Related Technical Assistance (TRTA-II) Program and implemented by the United Nations Industrial Development Organization (UNIDO).

It is a matter of immense pleasure for me that the faculty of the Department of Food Science and Technology has taken keen interest to launch this diploma course at the University of Karachi. The curriculum for the diploma has been evaluated critically in steps by the Board of Faculty of Science, University of Karachi to uplift the standard of the course till formal approval by Academic council.

I, sincerely hope that with the support of University administration, EU and UNIDO the Department of Food Science & Technology would be able to groom skilled and qualified graduates with a Post Graduate Diploma (PGD) in Food Safety and Controls.
Food Control Systems in any country are necessary to protect their population against unsafe, adulterated or poor quality. This implies that food legislation safeguards consumer’s right to safe foods. Due to lack of food regulations and its implementation in our country, the nation is deprived of its basic right of access to quality food. The aforementioned causes led to food insecurity situation in Pakistan in-spite of the fact that we are an agro-based economy. There is need to take strong measures which would subsequently lead to supply of safe food to the nation and would also increase our food exports by making quality products that meet International Sanitary and Phytosanitary Standards (SPS) as designed by the World Trade Organization (WTO).

The launching of one-year postgraduate Diploma Course on “Food Safety and Controls” at our Department is one of the potential revolutionary initiative taken by the European Union through its Trade Related Technical Assistance (TRTA II) Program implemented by United Nations Industrial Development Organization (UNIDO) in association with International Trade Centre (ITC) and World Intellectual Property Organization (WIPO).

I would like to express my sincere gratitude to the International Experts Dr. Andrew Mathieson and Dr. Ian Goulding as well as UNIDO’s officials Dr. Ali Abbas Qazilbash and Mr. Aurangzaib in designing and developing this extensive course as well as their support during the course.
University of Karachi, founded in 1951, is one of the oldest institutions of higher learning in Pakistan. It offers rigorous and vibrant Graduate and Post-graduate degree programs in the fields of Arts, Business Management, Education, Islamic Studies, Law, Medicine, Pharmacy and Science & Engineering. The research and teaching programs are supervised by approximately 1000 highly qualified and internationally recognized eminent faculty members. These programs are being offered in 54 Teaching Departments and 17 Research Institutes / Centers, of nine Faculties.

To date, University of Karachi has produced more than 1600 Ph.Ds and more than 2000 M.Phils. Presently, more than 3000 students are enrolled in M.S., M.Phil. / Ph.D. and other research programs besides 24,000 students in graduate and undergraduate programs. University of Karachi, in 2009, achieved the status of being in the list of world’s top Universities. According to the QS (Times Higher Education – Quacquarelli Symonds) World University Ranking, University of Karachi is ranked among the top universities of the world for the last three consecutive years. It leaves behind other Universities in the disciplines of Natural Science, Arts & Humanities, Life Science, and Social Science. In addition, according to QS-Asian Universities Ranking 2013, University of Karachi stands 138th among 425 top Universities of Asia. Since the entire nation accredits University of Karachi for its remarkable services rendered in higher education, the Higher Education Commission has ranked this University at number 02 among public and private universities/institutes in its national university ranking criteria 2013.

University of Karachi is publishing extensively in the field of Science and Social Sciences in high impact factor journals. Moreover, the University is accredited for having more than 60 patents in the field of scientific research at national as well as international levels. Large numbers of faculty members of University have been receiving Research Productivity Awards every year.

University of Karachi provides excellent opportunities to its postgraduate students and faculties for linkages & collaboration with the World’s top Universities under collaborative research and sandwich/split programs. In this context, various Memorandum of Understanding (MOUs) were signed between University of Karachi and the counter art foreign Universities including University of
Idaho (UI), New York Blood Center, and New Jersey Medical School, Public Health Research Institute, Department of Molecular Microbiology and Immunology, Bloomberg School of Public Health, Johns Hopkins University USA, University of Isfahan and University of Hormozgan, Iran; University of Peace, Costa Rica; University of Apartado, Mexico; University of Bedfordshire and University of Stafford Shire, UK, University for Foreigners of Perugia and University of Sassari, Italy. Likewise, University of Karachi is also smoothly running various collaborative research projects under supervision of its faculty members with the University of Hamburg, Max Planck Institute of Biochemistry, Munich, Germany, at UAE University, at Institute of Medicinal Plant Development, Beijing, China, University of New South Wales, Sydney, Australia, University of Salzburg, Austria. Some recent linkages include international consortium on Climate Change between the Institutes of Environmental Studies of the Universities of Pakistan-China-Netherland-France. University of Karachi has also been selected for a European Union Consortium of European & Asian Universities under the Erasmus Mundus Europe Asia Fully Funded Scholarship Program; 2010 to 2015. Consortium includes Lund University Sweden, University College Dublin-Ireland, University College London-Great Britain, University of Amsterdam-Netherlands, University of Milan-Italy, University of Warsaw-Poland, University of Pierre & Marie Curie-France and Aristotle University of Thessaloniki-Greece. In addition several collaborative research projects are in process with the University of Giessen; Germany, University of Hannover; Germany, Gene Research Centre-University of Tsukuba; Japan, Soil and Fertilizers Research Institute; Vietnam, University of Dundee; Scotland, Newcastle University; UK etc. University of Karachi is also accredited for having the world’s only UNESCO chair on Halophytes. The chair has been established in the Institute of Sustainable Halophyte Utilization, in recognition of remarkable research work of the institute.

University of Karachi offers the upcoming graduate and post-graduate students a multidisciplinary environment, state-of-the-art laboratories, digital library, video conferencing facilities and is committed to its tradition of producing top-quality graduates in cutting-edge areas of Business and Management Sciences, Bio-Medical & Engineering Sciences, Social and Natural Sciences and Technology.
DEPARTMENT OF FOOD SCIENCE & TECHNOLOGY

The Department was established in 1994 to cater 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. Rashida Ali was the founder Chairperson of the Department. The department over the years has developed linkages with universities in Germany, Britain and USA. It constantly arranges workshops, seminars, conferences and training courses. The Department enjoys a very good rapport with both national and multinational food industries in Pakistan.

Aims and Objectives
The department has the following aims & objectives:

- To produce qualified food scientists, food technologists and food nutritionists for food industries, teaching and research organization.
- To establish links between teaching/research institutions, government, commercial organizations and consumers.
- To preserve, process and manipulate the agricultural crops to avoid post harvest losses.
- To protect our environmental condition from deterioration of food.
- To introduce novel, nutritious, value added and safe food products for local consumption and export.
- To incorporate the food industry waste for new products development.
- To provide consultancy and advisory services to food industries.
- To provide diagnostic analyses of food products.
- To establish international collaboration with Food Science departments and food processing industries by exchanging students and staff.
- To organize programs for creating awareness about the importance of safe processed nutritious foods.

Facilities
The new building of the Department of Food Science & Technology has eight major laboratories equipped with all basic facilities. The laboratories include Food Engineering Lab, Food Chemistry Lab, Food Microbiology Lab, Food Quality Control Lab, Food Analysis Lab, Food Biochemistry & Post harvest Lab, Food Analytical Lab and Computer/IT Lab.

Seminar Library
The Department has a seminar library with about 1000 books.
Career Opportunities
The Degree holders may work as Food Technologist, Food Engineer, Food Chemist, Food Analyst, Production Manager, Quality Control Manager, Quality Assurance Officer, Product Development Officer, Food Inspector and Food Researcher in Food and Allied Industries, Ministries of Health, Education, Food & Agriculture, Science & Technology as well as different Academic and Research Organizations.

Academic Programs Available
- BS & B.Sc. (Hons.) (Morning & Evening)
- MS, M.Phil. & M.Phil. leading to Ph.D
- PGD in Food Safety and Controls
POST GRADUATE DIPLOMA IN “FOOD SAFETY & CONTROLS”

Introduction

Food safety is a very critical public health issue and food borne diseases have a major impact on health worldwide. According to World Health Organization millions of people die due to food poisoning every year. Even in industrialized countries, the percentage of people suffering from food borne diseases annually has been reported to be up to 30%. Food contamination thus creates an enormous social and economic burden on communities and their health systems.

In this context, governments worldwide are intensifying their efforts to improve the safety of the food supply and promoting the application of Food Safety Management Systems in food industries. The SPS (Sanitary and Phytosanitary controls) are essential both for the import and export of food products and is a mandatory requirement of World Trade Organization (WTO).

To meet the dire need of food safety professionals and officers in federal, provincial and local Government’s ministries and departments as well as food processing industries, a one year post graduate diploma course has been designed by an International Expert Dr. Andrew Mathieson, from Public Health Department, Bedford University, United Kingdom and a representative of European Union’s TRTA-II Program in consultation with the faculty members of the Department of Food Science & Technology.

The one year post graduate diploma course in Food Safety And Controls, accredited by Royal Environmental Health Institute of Scotland (REHIS) will be conducted at the Department of Food Science & Technology, University of Karachi under European Union (EU) funded Trade Related Technical Assistance (TRTA-II) Program implemented by United Nations Industrial Development Organization (UNIDO) in association with International Trade Centre (ITC) and World Intellectual Property Organization (WIPO) in three universities of Pakistan.

The diploma course is aimed to offer flexible opportunities for knowledge, skills and experience acquisition while progressing, continuing professional development at post graduate level. Graduates from this one year program will have high level knowledge of the causes and solutions of the problems in food safety faced by the consumers in Pakistan. They will have the relevant scientific, technical and legal knowledge to detect fraudulent and dangerous foods and advise manufacturers and processors on how to improve food manufacturing and food safety standards in order to make food safe, increase
productivity, and critically ensure compliance with legal SPS requirements for both domestic and in exports. This unique suite of courses is designed to meet the current needs of food safety professionals in Pakistan.

The Department of Food Science & Technology has successfully produced first batch and after an overwhelming response, the department is pleased to announce admission in second batch for PGD in Food Safety & Controls. The diploma course is aimed to offer flexible opportunities for knowledge, skills and experience acquisition. Graduates from this one year program will have high level knowledge of the causes and solutions of the problems in food safety faced by the consumers in Pakistan. Such training modules with requisite knowledge & technology in emerging global scenario will also make the Food Safety Inspectors/Officers aware of global developments and WTO needs, in food inspection system.

**Objectives**

- To protect consumer by improving the safety status of food up to consumer desk
- To facilitate Pakistan’s capacity to integrate into global trade
- To improve compliance of exported and imported products with market requirement
- To bridge the knowledge gap of the existing food safety officers in the country and their counterparts in developed countries.
FACULTY PROFILE

Prof. Dr. M. Abid Hasnain (Chairman) is associated with the Department of Food Science & Technology, University of Karachi for the last 27 years. He was honored with three distinct Research Fellowships namely: Chinot Beradri Research Fellowship, British Council Fellowship and English Biscuits Manufacturers Fellowship. He is engaged and focused to attend and conduct highly professional international trainings including Advanced Analytical Techniques (USA), Textural analyses (USA), Food Packaging & Extrusion Technology (UK), Extrusion Technology (Germany), Postharvest Technology of Fruits (F.A.O), ISO 22000 Food Safety Lead Auditor Course. Besides attending much technical and professional trainings, Dr. Hasnain has also been actively participating in promoting research by securing research grants from the university as well as Food industries. He always has close contacts with all leading food industries in the country. He has also rendered services as a technical and subject expert to Technical Education Project, Education Department, Govt. of Sindh; Project of Restructuring of Technical Education and Vocational Training Program, Quetta; PCSIR Laboratories; National Agricultural Education Accreditation Council and NED University of Engineering and Technology.

He has supervised 07 Ph.D’s and 05 M.Phil/MS, most of them are faculty members and many more have been working on their Ph.D. under his supervision. He has also supervised more than 80 research project students at M.Sc. level and many more have
He has published more than 50 publications in reputed and peer-reviewed research journals.

Dr. Hasnain is associated with various Academic and professional bodies and associations. He is a member of Board of Advanced Studies and Research, Board of Faculty of Science, Board of Studies, Department of Food Science & Technology; Board of Studies, Faculty of Engineering; Board of Studies, Department of Health and Physical Education, University of Karachi.
Prof. Dr. Jehan Ara has more than 25 years of experience of teaching and research. She is associated with the Department of Food Science & Technology for the last 14 years. Prior to this she worked as Research Fellow at H.E.J Research Institute of Chemistry and at the Department of Biochemistry on Pakistan Science Foundation (PSF) and Office of Naval Research (ONR) research projects. Her main areas of research interests include Food Biochemistry, Post harvest technology of fruits and vegetables, Biotechnology, Marine Biochemistry, Food Enzymology, Molecular Biology, Food lip ids and Dairy Technology.

She was awarded Fulbright Scholarship for the Post Doctoral research at the department of vegetable crops, Mann lab. University of California, Davis, USA. Dr. Jehan Ara has also been a Visiting Scientist at the department of plant science, Mann Lab, University of California, Davis, USA (2007-08). She was awarded Research Productivity allowance from Pakistan Council for Science & Technology in recognition of excellence of Research work (2003-04). She is HEC approved Ph.D. supervisor and has been engaged in supervising M.Sc., M S, and M.Phil., /Ph.D. students. She has been actively involved in research and published about 50 original scientific research papers in peer reviewed journals. She has secured substantial grants from National and International funding agencies including Office of Naval Research, USA, Pakistan Agricultural Research Council, USDA and Higher Education Commission, Islamabad. In addition, she has undertaken many research projects funded by Faculty of Science, University of Karachi. She has always taken interests in updating knowledge and attending subject focused national and international workshops and courses including Management of Fruit Ripening; Postharvest Technology, Chemical and Laboratory Safety, Maintaining quality and safety, and Fruit Ripening and Ethylene Management, at University of California, USA.

Dr. Jehan Ara has been a very active member of various official bodies, societies and associations: namely, American Phytopathological Society, International Society of Plant Pathology, Chemical Society of Pakistan, Pakistan Society of Food Scientists and Technologists, Pakistan Food Professionals Association, American Chemical Society, International Society for Horticulture Science, Board of Studies, Board of Faculty of Science and Academic Council, University of Karachi.
Prof. Dr. Syed Asad Sayeed has more than 26 years of teaching and research experience. He holds B.Sc. (Hons.), M.Sc. in Applied Chemistry and earned his Ph.D. in Food Science & Technology from the same department. He did two post docs from UK and Germany. He has been awarded numerous fellowships and scholarship including Commonwealth Fellowship for Post Doc Research in UK; DAAD Fellowship for Post Doc in Germany; British Council Scholarship for Research in UK; UNESCO Fellowship; Pakistan Science Foundation Fellowship; National Scientific Research Development Board Fellowship; EBM Fellowship etc.

He got a number of trainings from the reputable institutes and organizations such as University of Humberside-UK; University of Nottingham-UK; Centre for Nutrition Research-Germany; Nuclear Institute for Food and Agriculture-Peshawar; Nuclear Institute of Agriculture and Biology; HEJ Research Institute of Chemistry, University of Karachi. Dr. Sayeed has diversified work experience at academia and industry. He has been working closely with the food safety professionals since long and has the expertise of food hygiene, sanitation and safety through the sound knowledge of ISO 22000:2005, HACCP and other international food safety standards.

He has supervised, so far, 35 M.Sc. students for their research projects, one M.Phil. & two Ph.Ds. He completed 13 funded research projects and published research papers in national and International scholarly and peer-reviewed journals. He has conducted numerous courses, seminars, workshops, conferences and symposia.

Dr. Sayeed has been a member of various official bodies: namely, Board of Studies of Department of Food Science & Technology; Board of Faculty of Science-University of Karachi; Academic Council of University of Karachi; Pakistan Food Professionals Association- adhering body of International Union of Food Science & Technology.
**Dr. Feroz Alam** is an Assistant Professor at the Department of Food Science & Technology, University of Karachi and Program Coordinator-PGD in Food Safety and Controls. He holds M.Sc. in Analytical Chemistry and both M.Phil and Ph.D. in Food Science. He has about 4 years experience of industry and 10 years experience of teaching and research. He supervised more than 40 M.Sc. students in their research projects. He has undertaken 5 KU funded research projects and published several research papers in reputed national and international journals. He has received training in different areas of food processing and food safety. His main area of interest includes Food Inspection, Food Quality Control and Starch-Hydrocolloid complex system.

Dr. Feroz has always been very active in different curricular and extra-curricular activities. He is the Departmental Student’s Advisor, member Board of Faculty of Science, member Board of Studies Department of Food Science and member of Departmental Research Committee.

**Dr. Abdul Haq** is an associated with the Department of Food Science & Technology from the last 8 years. He completed his masters from the same department in 2004 with distinction and has been worked in National Foods Limited as research officer. He has joined the Department as a faculty member in 2006 and obtained his Ph.D. degree in 2013. He also has a postgraduate diploma in Statistics. He has been actively involved in research and has published 16 scientific research papers in peer reviewed journals. His research interest includes edible food packaging and mathematical modeling of food processes.

Dr. Haq has a dynamic research experience and supervised more than 15 research projects at M.Sc. level and 2 KU funded research projects. He is also actively involved in various professional activities of the Department of Food Science & Technology, University of Karachi, and has been organized various training courses in the field of food safety, HACCP and Halal foods.
Dr. Tahira Ali has been working as a faculty member since 2011 and has outstanding academic career. She has secured 1\textsuperscript{st} class first position and Gold medals both in B.Sc.(Hons.) and M.Sc. He was awarded her Ph.D. in 2013 on physicochemical properties and Amy lose-lipid complex formation in native and chemically modified Pakistani White Sorghum starches. She has supervised 20 research projects at M.Sc. level and published 10 research articles in internationally reputed journals. Eight of her articles are published in Annual News Wheat Letter, Kansas Manhattan, USA. She is also a reviewer of International Journal of Food Properties, Taylor and Francis, USA. She also acquired one patent and was awarded Pakistan Science Foundation (PSF) funded research project.

Dr. Tahira has actively participated in several national and international conferences and involved in various research and professional activities of the Department of Food Science and Technology, University of Karachi.

Dr. Tanveer Abbas is an assistant professor at the department of Microbiology. He received his PhD from the University of Surrey, Guildford, United Kingdom since then he has been working in the field of food microbiology and preservation, natural antimicrobials and bioactivities of natural products. He is the member of Applied Microbiology, United Kingdom, American society for Microbiology and Pakistan Society for Microbiology. He is the founder of Pakistan Society for Applied Microbiology.

Dr. Abbas has diversified work experience at academia and food safety researches. He has participated different workshops on Microbiology. He has always been very active in different curricular and extra-curricular activities. He is the member of Senate, University of Karachi, Member Board of Studies Department of Microbiology, Member Departmental Research Committee, Department of Microbiology, University of Karachi.
Mr. Khurrum Hassan is Senior Manager Quality, R&D and Food Regulatory Affairs at Young's Private limited. He holds M.Sc. and M.Phil. in Food Science from University of Karachi and M.B.A in Operation and Quality Management from Hamdard University. He acquired numerous comprehensive and extensive training e.g. Green Belt Six Sigma from Robust-Pro Canada and NED University; Lead Auditor for BRC Global Standard for Food Safety; Lead Auditor for ISO 22000:2005 and Certified Quality Professional from PIQC & NED University, Karachi.

Mr. Hassan has diversified skill for both academia and food industry. He has about 15 years of substantial hands on experience of various executive positions throughout his professional life and has been closely attached with the Department of Food Science & Technology, University of Karachi as a visiting faculty member.

Mr. Hassan is a professional trainer of food safety and management systems and has been conducted the training session on various professional training programs.

Ms. Sadaf Ahmed is Assistant Professor, Department of Physiology, University of Karachi; Clinical research certified professional from DUHS; CEO of Advance Educational Institute & Research Centre (AEIRC) and President, Pakistan Society of Psychophysiology. She has more than 50 publications in National and International research journals. She is recently working on Neuropathic pain in Pakistan, serving as chief Editor of International Journal of Endorsing Health Science Research & Escalating Research. She is PhD Scholar in Neuro-Science. Life time member of World Women Neuro-Science. She is an educationist & well known public speaker who believe in spread and sharing of knowledge. Facilitator of more than 50 Events (Seminars / workshops / conferences / festivals). As motivational icon of health & social science students she always keeps on speaking and facilitating sessions.

Ms. Sadaf is an active member of various professional societies e.g. Pakistan physiological society; Pakistan society of basic & applied neurosciences; Microbiology Association of Pakistan, etc.
Mr. Shaharyar Ahmed is a Lead Auditor & Trainer for Quality & Food Safety Standards (QMS, FSSC, IFS, Halal, HACCP). He is also qualified auditor for SQA (Unilever Standard) and SQE (Kraft Food Standard), MAS (Metro Standard). He has also performed audits against BRC issue 5 standards. Currently, he is serving in SGS-Pakistan Private Limited as a Lead Auditor & Trainer and has conducted more than 600 audits in different industries. In connection with these activities, he has conducted more than a hundred quality and food safety trainings, seminars and workshops.

Mr. Shaharyar is running a Halal certification scheme in SGS worldwide as the product owner. He developed a complete Halal procedure and looking after all Halal certifications and auditor competency in SGS. He has received SGS Pakistan employee of the year award in 2011. He is amongst few Approved Auditors for IFS around the globe. He travelled India-Bangalore twice and KSA-Riyadh, China and Germany to carry out IFS Audits in different industries.
## COURSES OFFERED

### FIRST SEMESTER

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Title of Course</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>FSC-101</td>
<td>Food of Animal Origin</td>
<td>2+1</td>
</tr>
<tr>
<td>FSC-103</td>
<td>Food of Plant Origin</td>
<td>2+1</td>
</tr>
<tr>
<td>FSC-105</td>
<td>Food Microbiology</td>
<td>2+1</td>
</tr>
<tr>
<td>FSC-107</td>
<td>Food Safety Science</td>
<td>2+1</td>
</tr>
<tr>
<td>FSC-109</td>
<td>Food Sampling Techniques and Analysis</td>
<td>1+2</td>
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<tr>
<td>FSC-111</td>
<td>Food Toxicology &amp; Adulteration</td>
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Total Credit Hours in 1st Semester: 18 (11+7)

### SECOND SEMESTER

<table>
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<th>Course No.</th>
<th>Title of Course</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>FSC-100</td>
<td>Food safety Management Systems</td>
<td>3+0</td>
</tr>
<tr>
<td>FSC-102</td>
<td>Food Related Legal System</td>
<td>2+0</td>
</tr>
<tr>
<td>FSC-104</td>
<td>Food Inspection, Investigation and Judgment</td>
<td>3+0</td>
</tr>
<tr>
<td>FSC-106</td>
<td>Food Safety Standards and Trade</td>
<td>2+0</td>
</tr>
<tr>
<td>FSC-108</td>
<td>Compliance Strategies and Effective Enforcement</td>
<td>2+0</td>
</tr>
<tr>
<td>FSC-110</td>
<td>Food Plant Sanitation &amp; Hygiene</td>
<td>2+1</td>
</tr>
<tr>
<td>FSC-112</td>
<td>Special Visit, report writing &amp; professional skills</td>
<td>0+3</td>
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Total Credit hours in 2nd Semester: 18(14+4)

Total Credit Hours = (18+18) = 36
Admissions will be given purely on merit basis.

Final selection of the candidates will be based on their performance in entry test, academic record, experience and performance in interview.

The candidates seeking admission should have B.S. (4-year) /M.Sc. or higher degree (equivalent to at least 16 years of education or higher) in pure and applied sciences. The application form may be obtained from the office of the Department of Food Science & Technology, University of Karachi on the payment of Rs. 500/- OR downloaded free from the University website and submitted along with all other required documents along with a Pay Order of Rs. 1,500/- in favour of PGD - Food Safety and Controls before the deadline. Incomplete and late applications will not be entertained.

The candidates will be required to pass entry test, consisting of two major portions: 50% general (English & General Knowledge) and 50% subject (Food Science & General Science). They will have to score minimum of 50% marks in each portion to qualify for interview. In exceptional circumstances the University may accept an aggregate score of 50% so long as the candidate scores 50% in subject portion. The candidates who have already passed NTS based GAT test can be exempted from general part of entry test.

The candidates who will qualify in the entry test will be required to appear for an interview before selection committee, constituted by the Chairperson, Department of Food Science & Technology. List of successful applicants will be displayed on the website www.uok.edu.pk and on Notice Boards of the Department.

If any candidate fails to deposit the University dues within the stipulated period after the display of admission list, his/her admission shall automatically stand cancelled without any prior notice and the admission on that seat will be offered to next waiting candidate on merit basis.

Medium of instruction

Medium of instruction,
examination and evaluation will be English.

**Examination & Evaluation System**
Examinations and evaluations will be conducted according to the rules and regulations of University of Karachi. However, due to International recognition, the role of external examiners will also be considered.

**Course Duration**
This diploma certificate will be awarded after successful completion of one academic year consisting of two regular semesters. If a student fails to successfully complete course in specific time, the maximum duration for the award of Diploma will be two years consisting of four regular semesters. If any student fails to complete his diploma program in two years, he will be dropped from the program. There shall be two semester in each academic year (semester I & semester II) of 18 weeks each. Out of 18 weeks 16 weeks shall be the actual teaching time, the rest may be utilized for admission, conduct of examinations, preparation and declaration of results and one week semester break.

**Attendance requirements**
A candidate with less than 75% of the attendance in each course shall not be allowed to take the final examination of the course in a semester.

**Class Timings**
All the theory classes and practical sessions will be conducted at the Department in the evening session (from 6:00 pm to 9:00 pm)

**Fee Structure**

<table>
<thead>
<tr>
<th>Semester</th>
<th>Fee</th>
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<tbody>
<tr>
<td>Semester I</td>
<td>Rs. 30,000</td>
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<tr>
<td>Semester II</td>
<td>Rs. 30,000</td>
</tr>
<tr>
<td>Total</td>
<td>Rs. 60,000</td>
</tr>
</tbody>
</table>
ADMISSION SCHEDULE

☐ Collection and submission of application forms along with processing fee…………………………24th -28th March, 2014

☐ Display of list of eligible candidates for entry test on KU website and Department notice board…………………………………………………………………………………..31st March, 2014

☐ Entry test of the candidates will be held on……………………………………………………………………..1st April, 2014

☐ List of successful candidates on KU Website and Department notice board……………………3rd April, 2014

☐ Interview of the short listed candidates at the Department…………………………………………………………7th April, 2014

☐ Display of final list of successful candidates on KU Website and Department Notice Board…………………………………………………………………………………..8th April, 2014