

Department of

Pharmaceutics

Introduction

Department of Pharmaceutics, Faculty of Pharmacy, University of Karachi, comprises of 11 academic and 13 non-academics staff, including three Professors, eight Assistant Professors, and three Cooperative Teachers, most of them having doctoral qualification. The Department covers 24 courses spread over five years of Pharm-D program. The department is actively involved in pharmaceutical research that covers all aspects of Pharmaceutical sciences offering MS and Ph.D. programs. Till date, the department has produced 69 M. Phil and 11 Ph.D. scholars in different disciplines of pharmaceutics.

The department of Pharmaceutics at University of Karachi has its history as old as the history of the faculty of pharmacy itself. The faculty of pharmacy was first founded in 1964 as a department under the faculty of science in University of Karachi by the now known to be as Father of Pharmacy Professor S.M.S. Zoha. In the year 1973, in which the status of the department was approved as a faculty with four distinctive departments one of which was the department of pharmaceutics.

Facilities

Laboratories Research Laboratories
Computer Laboratories
Seminar Library

Specific Research Areas

Formulation Development
Formulation Optimization & Improvisation
Pharmaceutical Microbiology
Novel drug delivery system
Bio-Pharmaceutics Bioavailability
Physical Pharmacy
Clinical Pharmacy and Pharmacy Practice

Career Opportunities

The scope of pharmacy all over the world is very promising in which the graduate in pharmacy find himself in a very prestigious and professional status to serve the society in different disciplines of the field as a health care professional. After obtaining graduation degree from the faculty of pharmacy the students has the opportunity to join hospitals where

he would be a drug expert taking right decisions about the safe use of medicines, in community as one of the beneficial members of the society, in pharmaceutical industries that has the largest proportion of openings in different departments of the industry, similarly, he could also join governmental jobs where he regulates the drug portfolio and establishes policies regarding the drug usage and regulatory matters, in pharmaceutical journalism, in academia where he would be in a highly prestigious assignment to train and produce more pharmacists. A pharmacist would also find good opportunities in research and development where one can satisfy his eager to participate in pharmaceutical research as a scientists. And that is not all; there are too many job opportunities and career enhancing chances for pharmacist abroad.

Faculty Members Professors

Dr. Nighat Rizvi (Chairperson)
Dr. Fouzia Hassan

Associate Professor

Dr. M. Harris Shoib

Assistant Professors

Ms. Shaista Hamid
Dr. Shahnaz Gauhar
Dr. S.M. Farid Hassan
Dr. Rabia Ismail
Mr. Iyad Naeem Muhammad
Ms. Sabhat Jabeen
Ms. Rehana Saeed

Program Available

M-Pharm

For Further Details

Telephone: 021-99261300-06 Ext: 2252

Department of

Pharmacology

Introduction

The Department of Pharmacology is one of the important Department of the Faculty of Pharmacy since 1973 not only sharing a major load at the under graduate level but also preparing students to fill the gap by suitably qualified manpower in the field of Pharmacy at Post graduate levels. The current expansion of the Department and graduate programs in the areas of modern pharmacology including Neuropharmacology, Toxicology and Biochemical Pharmacology will be expected to place the Department among high research ranking Department of the University.

The major academic objectives of the Department are to facilitate Basic and Applied Research, educate under graduate, graduate and professional students in various disciplines and provide academic excellence. Department of Pharmacology has so far produced the highest number of Ph.Ds in the Faculty of Pharmacy and a large numbers of M. Phil and M- Pharm. The Department is composed of highly competent primary faculty, research faculty and technical support staff.

Facilities

The Department of Pharmacology laboratories are well equipped to conduct the experimental courses of Pharmacology, Physiology, Biochemistry and Pathology.

Separate Research lab has also been assigned for Research students which have all the basic and enhanced equipments and instruments required for research work.

Computer and internet facilities have been provided so students can have easy access to latest information and data.

Pharmacy library has also been equipped with latest books and research journals of pharmacology.

Specific Research Areas

- Neuropharmacology
- Toxicology
- Biochemical Pharmacology
- Cardiac vascular pharmacology
- Psychopharmacology

Career Opportunities

After completion of M-Pharm in the field of Pharmacology successful candidates will be able to perform duties in follows areas.

Research	Education
Hospital Pharmacist	Clinical Pharmacist
Pharmaceutical Industry	Drug testing
laboratories	

Faculty Members

Professors

- Dr. Rafeeq Alam Khan (FSL)
- Dr. Rahila Najam (Chairperson)

Assistant Professors

- Ms. Tasneem Mariam
- Dr. Syeda Afroz
- Dr. Afshan Siddiq
- Ms. Sadia Ghousia Baig
- Dr. Nuzhat Sultana

Lecturers

- Ms. Saira Saeed Khan
- Ms. Azra Riaz
- Mr. Shadab Ahmed

Program Available

M-Pharm

For Further Details

Telephone: 021-99261300-06 Ext: 2206
 Website: www.uok.edu.pk

Department of

Pharmacognosy

Introduction

Pharmacognosy derives its origin from two Greek words, pharmakon meaning drug, and gnosis meaning knowledge. It is the study of natural bioactive substances obtained from terrestrial and marine plants, animals, microbes and minerals, for their physical, chemical, biochemical and biological properties, their taxonomy and ethnobiology. Pharmacognosy is one of the major area of pharmaceutical sciences, today is a highly interdisciplinary science, linked to phytochemistry, microbial chemistry, biosynthesis, biotransformation, chemotaxonomy, biotechnology and other biological and chemical sciences. Research in pharmacognosy provides for the discovery of lead compounds for drug development, new methods of analysis for drugs, toxins and herbal preparations.

The objective of the Department of pharmacognosy is to educate students about the natural source of drugs, their pharmacognostic and phytopharmacological attributes, chemical and spectroscopic profile isolated molecules and their development as modern pharmaceutical products.

Facilities

The department has one lab at under graduate level and three graduate level Labs. These are well equipped to conduct the Lab work at both levels. The students can work on latest spectrophotometer, PCR, HPLC, Lypholyzer, Rotary evaporator, Incubator oven, Flash Chromatography Distillation assembly two channel recorder, Physiometer Analgesia meters soxhelet Apparatus.

Specific Research Areas

Natural Products, clinical studies, standardization of herbal products, Formulations Isolation of Natural products, Analysis of marine and terrestrial flora and fauna Ethnopharmacognosy. Natural toxicants, Nutraceuticals, cosmeceuticals, zoceuticals

Career Opportunities

The graduates from the various programs offered can work in both modern and herbal, pharmaceutical organizations, ministry of health, WHO, various drug regulatory bodies, research organizations, teaching institutions.

Faculty Members Professors

Dr. Syed Waseemuddin Ahmad (Chairman)
Dr. Mansoor Ahmad
Dr. Ghazala H Rizwani

Assistant Professor

Dr. Iqbal Azhar

Lecturers

Mr. Salman Ahmed
Ms. Safia Abidi

Program Available

M-Pharm

For Further Details

Telephone: 021-99261300-06 Ext: 2202
Website: www.uok.edu.pk
Email: pharmacognosy@uok.edu.pk

Department of Agriculture & Agribusiness Management

Introduction

The Department of Agriculture was launched as BS Program in Agriculture in 2004 and acquired the status of the Department in 2006. It was renamed as the Department of Agriculture and Agribusiness Management in 2008. The Department offers specializations in Agribusiness Management, Plant Protection and Plant Pathology.

Agribusiness is an important and ever expanding industry in Pakistan, It combines the study of agricultural sciences with the management skills providing an understanding of economic and business principles and their application to Agribusiness.

The program aims to develop a range of personal and transferable skills and critical appreciation of the techniques to assist effective execution of the agribusiness management function.

It cannot be denied that the implementation of proper pest and disease management strategies can be helpful in increasing the crop yield and ultimately boost the economy of the country. The courses offered for specialization in plant pathology or plant protection enable the students to acquire in-depth knowledge of pest and diseases affection crops, vegetable, fruit and ornamental plants in the country and make them aware of management strategies to overcome the problem.

Facilities

The department is well equipped with modern teaching aids. It also has facilities for research on topics related to fields of entomology, mycology, plant pathology and Agribusiness. The department's seminar library has a good collection of books related to agriculture and agribusiness, that students can have easy access to.

Specific Research Areas

The department is actively engaged in research related to Entomology, Mycology, Plant Pathology and Agribusiness. Several research students are also enrolled for M.Phil / Ph.D. programs. Faculty members and research students regularly publish research papers in journals of national and international repute.

Career Opportunities

Specialization in Agribusiness Management is helpful in getting jobs in farm business related to national and multinational organizations as managers, consultants, supply chain coordinators and accountants. It also provides an opportunity to enter self-employment immediately after graduating, largely within the farming or food sectors.

Students specializing in plant protection or plant pathology have job opportunities in various research organizations like plant protection, PARC, PCSIR, NIAB, NIA, ARI etc. They can also get jobs in plant and pesticide related national and multinational Organizations.

Faculty Members

Professor

Dr. Saleem Shahzad (Chairman)

Lecturers

Mr. Muhammad Talha Azeem
Mr. Syed Hasan Rizvi

Program Available

M.Sc in Agriculture &
Agribusiness Management

For Further Details

Telephone: 021-99261300-06 Ext: 2546
Website: www.uok.edu.pk/agriculture
Email: sshahzad@uok.edu.pk

Department of

Applied Physics

Introduction

The Department of Applied Physics was established in 1971. The objective of the department is to enable the students to face challenges of the fast growing technology in the field of Electronics and semiconductors so that they can meet the growing technological needs of the industries of Pakistan in the area of applied physics.

The syllabus is updated to keep abreast with the latest development in technology. It provides an in-depth understanding of the subject such as analog and digital electronics, industrial electronics, semiconductor devices, communications systems including microwave and optical fiber communications. Microprocessor / Microcontroller and digital signal processors (DSP) are hubs of intelligent electronic systems including computers and almost all state-of-the-art equipment used in communications. These devices are used in industrial and medical applications. A comprehensive scheme of study and applications is provided for these subjects.

The laboratory training begins with circuits to basic analog electronics, industrial electronics, leading to the development of a single board computer based on microcontroller. The students are also trained in programmable Logic Controllers (PLC) through the use of software and hardware simulators. Similarly, they are trained in the field of communications using communication training kits.

Facilities

The department has well equipped laboratories to teach practical aspect of electronics. In addition to general purpose laboratories where students perform experiments on circuits based on analog and digital electronics, separate laboratories are established for training. These include computers laboratory which is equipped with latest branded computers connected through LAN.

Communication laboratory helps train students in microwave and optical fiber communication systems. Students use software and hardware tools such as VHDL, electronic design automation to develop embedded systems. Computer-controlled (CNC), PCB prototyping machine, logic analyzer, spectrometer and lock in amplifiers are available for research in the field of semiconductor.

Career Opportunities

A variety employment opportunities are available to the graduates of the applied physics, ranging from public sector organizations to multinational and national industries and research organizations.

Faculty Members

Assistant Professors

Ms. Farida Farrukh (Incharge)
Mr. Abid Hussain
Mr. Arshad Hussain (S/L)
Dr. Zeeshan Alam Nayyar

Lecturers

Mr. Faisal Rafique
Mr. Zia Ur Rehman
Mr. S. Mamnoon Akhter
Mr. S. Naseer Akhter
Ms. Nazia Sadiq
Ms. Ambreen Insaf

Program Available

M.Sc in Applied Physics with specialization in electronics

For Further Details

Telephone: 021-99261300-06 Ext: 2258/2564
Website: www.uok.edu.pk
Email: ffaru kh@uok.edu.pk

Department of

Botany

Introduction

The Department of Botany was established in 1953. The University at that time was located on Chand Bibi Road, near Civil Hospital Karachi. When the University moved to its present premises on 18th January 1960, the Department of Botany was initially located in two barracks. The present building of the Department of Botany with laboratories, lecture rooms and an auditorium was built in the late 1960's.

The Department offers over 65 different courses of studies at the undergraduate and post graduate levels to cater to the human resource requirements for teaching and research in the fields of education, agriculture, environmental NGO's, pharmaceutical and other industries. In the first and second year the students begin by taking Botany as a major subject together with two subsidiary subjects in other departments of the University. Starting with the diversity of plant life, an outline of the classification of plants, their identification, structure and function, it continues with genetic basis of variation and evolution of plants.

In the 3rd and 4th years, instead of subsidiary subject, they are required to study major subject within the field of Botany. In B.Sc. (Hons) / M.Sc. Final, the students specialize in one of the branches of Botany, which include: Applied Botany, Mycology & Plant Pathology, Plant Physiology, Plant Ecology, Phycology & Marine Botany and Plant Taxonomy.

Facilities

The Department has well equipped laboratories and a vast collection of books and research papers in the seminar library. It also provides facilities to students for research on topics related to different fields in plants sciences and mycology (including plant pathology). The Karachi University Herbarium in the Department of Botany has a collection of more than 150,000 plant specimens collected from different regions of Pakistan, in addition to a large collection of specimens of algae and fungi.

Specific Research Areas

The Department of Botany has developed a productive research and teaching group in plant sciences. Members of the faculty are working in many specialized fields of plant sciences and are endeavoring to enhance our knowledge of the plant world. Following are the specific research areas:

1. Classical Taxonomy, Chemosystematics and Cytogenetics.

2. Plant Anatomy and Plant Tissue Culture

3. Phycology and Marine Botany

4. Mycology, plant pathology and Fungal Biotechnology

5. Plant Physiology

6. Plant Ecology and Environmental pollution

Member of the teaching staff have completed about 50

research projects with the support of national and international funding agencies. Currently several research projects are in progress. More than 2000 research papers have been published in journals of international repute by the teachers and researchers of the Department. The Pakistan journal of Botany and International Journal of Biology and Biotechnology are also published from the Department of Botany, University of Karachi.

Career Opportunities

Specialization in different branches of plant sciences offered by the Department is helpful in getting jobs in agriculture based organizations, teaching in various colleges and universities and in environmental NGOs like WWF and IUCN.

Faculty Members

Professors

Dr. M. Javed Zaki (Chairman)
Dr. Surayya Khatoon
Dr. Syed Ehtesham Ul Haque
Dr. Aliya Rehman
Dr. Raiha Qadri
Dr. Shahnaz Dawar

Associate Professor

Dr. Rubina Abid

Assistant Professors

Dr. Seemi Aziz
Ms. Rubina Iqbal
Dr. Zamin Shaheed Sidiqi (S/L)
Dr. Sadaf Gul (on deputation at GC University Faisalabad)
Ms. Neelofer Hamid
Dr. Laila Shahnaz
Dr. Fahim Siddiqui

Lecturers

Ms. Amna Ahmed (S/L)
Mr. Naeem Ahmed

Ms. Maria Hamid
Mr. M. Azeem

Program Available

M.Sc in Botany

For Further Details

Telephone: 021-99261300-06 Ext: 2288

Website: www.uok.edu.pk/botany

Department of Chemistry

Introduction

Chemistry is a novel discipline of science. It helps understand the origin of life and also suggests ways to use non-living things for improving the quality of life. In order to train the young generation and to enable them to make this task easier, it is necessary to make the students understand the principles underlying the composition, structure and properties of substances along with the transformation that the substances undergo. It is therefore, obvious that chemical orientation cannot be imparted in isolation and that it has to be developed through an amalgamation of physics and biology on one hand, and engineering and applied sciences on the other. The Department of Chemistry, University of Karachi is working with the intention of pursuing this goal. It has a competent faculty, well equipped laboratories and other infrastructure. The graduate and Master programs in Chemistry are intended to meet the growing needs of competent manpower of Pakistan and that of the international community. The Department of Chemistry imparting professional and academic excellence to young people of Pakistan. It caters to different disciplines of chemistry i.e. inorganic, organic, physical and analytical chemistry at BS and MS level.

Facilities

The Department of Chemistry is equipped with many modern instruments for training the students to pursue challenging careers and research. These include pH/Ion meters, conductivity meters, polarimeters, refractometers, potentiometers, electrochemical analyzers, HPLC, atomic absorption spectrometers, UV-Visible spectro photometers, FTIR spectrometers, Guoy Balance for magnetic susceptibility measurements, flame photometers, computers, deionizers, analytical analysis, ovens furnaces, centrifuges as well as a substantial stock of glassware and chemicals. In addition, research students can derive benefit from the facilities at the H.E.J Research Institute of Chemistry. The facilities include NMR spectroscopy, mass spectrometry, CD/ORD spectroscopy and X-Ray crystallography. The Department of Chemistry is constantly trying to upgrade its laboratory and research resources so that its graduates can maintain a competitive edge in the job market. All the classrooms in the department are air-conditioned. The department has a local area network facility through which most scientific journals can be easily accessed.

Specific Research Areas

Analytical, Inorganic, Industrial, Organic, Physical, Environmental, Pharmaceutical, Clinical and Polymer Chemistry.

Career Opportunities

A person with an M.Sc or a B.Sc degree in Chemistry has a wide choice of employment opportunities, especially in the research institutions that are emerging in the country and also in different industries, both within and outside the country. Some of industries are listed below.

- Textile Industry
- Pharmaceutical Industry
- Clinical Laboratories
- Oil Refineries
- Chemical Industry
- Paint Industry
- Cement Industry
- Beverages and Food Product Industry
- Analytical & Instrumental Services Agencies
- Polymer Industry.

Faculty Members

Professors

- Dr. Syed Azhar Ali (Chairman)
- Dr. S. Sirajuddin Nizami
- Ms. Shaiista Jabeen
- Dr. Dilshad Waqar
- Dr. Zahida Khalid
- Dr. Majid Mumtaz
- Dr. Rahat Sultana
- Dr. Fouzia S. Rehmani
- Dr. Hajira Tahir
- Dr. Rehana Saeed
- Dr. Nasir Uddin Khan
- Dr. Rafia Saeed

Associate Professor

- Dr. Nasreen Fatima

Assistant Professors

- Mr. Muti ur Rehman
- Dr. Azhar Siddiqui (S/L)
- Dr. Munawar Rashid (TTS)
- Dr. Itrat Anis
- Dr. Uzma Ashiq
- Dr. Shazia Nisar
- Dr. Imran Ali Hashmi
- Dr. Raheela Naz (T)
- Dr. Tehseen Ahmed
- Dr. Sumayya Saeed
- Dr. Shaikh Muhiuddin
- Dr. Firdous
- Dr. Rashida Perveen
- Dr. Rifat Ara Jamal
- Dr. Zahida Kareem
- Dr. Humaira Bano (T)
- Dr. Erum Zahir
- Dr. Sumayya Masood(T)

Lecturers

- Ms. Hamida S. Muhammad (S/L)
- Ms. Noorin Siraj (S/L)
- Mr. Mohtashim H. Shamshi (S/L)
- Ms. Naushaba Rafiq
- Mr. M. Asad Khan Tanoli
- Mr. Mohsin Ali
- Ms. Saba Fazalur Rehman
- Ms. Qurat ul Ain
- Mr. Agha Arsalan Wasim

Program Available

M.Sc in Chemistry

For Further Details

Telephone: 021-99261300-06 Ext: 2290

Website: www.chemuok.edu.pk

Email: chemistry@uok.edu.pk

Department of

Computer Science

Introduction

The Department of Computer Science was established by a resolution of Academic Council in its meeting held on November 27, 1984. The Department began functioning in the academic year 1985-86 by offering two year degree program, Masters in Computer Science (MICS) and become one of the pioneering institutions imparting quality education of Computer Science and IT in Karachi.

The Department soon realized the need to strengthen the discipline of Computer Science by producing quality professional with sound fundamental knowledge. For this purpose, the Department started a four year degree undergraduate BS program in the year 1996, and a two year postgraduate program MS Computer Science as well as Ph.D. Computer Science. In 2009, the department moved to a new building with latest equipment and modern infrastructure.

Facilities

The new building of the Department of Computer Science (UBIT) is fully equipped with latest technology for students to get hands-on experience on different platforms of both hardware and software fields of computer science. Each lab is equipped with latest high-end computing facilities. The internet facility is available round the clock in all the labs, which enables students and faculty members to keep in touch with the latest trends in academic and the corporate world. The department is continuously upgrading the computing infrastructure according to the market demands. Following labs are functioning in the department.

Physics Laboratory Electronics Laboratory
 Networking Laboratory Software Engineering
 Laboratory Al & Soft-computing Lab. Database and
 Information System Lab. Graphics and Multimedia Lab.
 General purpose Computing Labs.

Seminar Library: The Department also provides an in-house seminar library facility which contains thousands of books on computer science/IT and related disciplines along with IT/CS magazines, international research journals and periodicals.

Specific Research Areas

The department has produced seven Ph.Ds during the past few years and over 10 candidates are on their way to the completion of their MS (CS) and Ph.D (Computer Science) research work. Our research areas include: Artificial Intelligence, Soft Computing, Neural Networks, Advance Database Systems (temporal and fuzzy), MIS Computer Networks, Network Security, Parallel & Distributed Computing, Natural Language Precessing etc.

Career Opportunities

Excellent Career opportunities exist for the graduates of Department of Computer Science. More than 80% of graduates are immediately hired by top ranking software houses and other institutions.

Faculty Members

Assistant Professors

Mr. Badar Sami (Incharge)
 Dr. S. Jamal Husain
 Dr. Nadeem Mahmood
 Dr. M. Sadiq Ali Khan
 Dr. Tehseen A. Jilani
 Mr. M. Saeed
 Mr. Hussain Saleem
 Mr. S. M. Khalid Jamal
 Mr. S. Asim Ali
 Mr. Farhan A. Siddiqui
 Ms. Humera Tariq

Lecturers

Ms. Erum Shahid
 Mr. M. Sajjad
 Mr. Jameel Ahmed (S/L)
 Mr. M. Naveed Anwar (S/L)

Program Available

Computer & Information Sciences (PGDCIS)

For Further Details

Telephone: 021-99261300-06 Ext: 2462, 3462

Website: www.uok.edu.pk/dcs-ubit

Email: cs.info@uok.edu.pk

Institute of

Environmental Studies

Introduction

The subject of environmental is multi disciplinary in nature. The solution of environmental and related problems therefore, requires the efforts of social scientists, health care personals, Engineers, Microbiologist, Chemists, Biologists and agriculturists. Medical profession although very much concerned with the health of the community also but it alone can not effectively solve environmental health problems. Civil engineers although taught about the public health engineering courses but the lack the knowledge and expertise for solving the problems of environmental engineering involving the principles of biology, microbiology and chemistry etc.

The institute was established in 1982. This is the oldest and pioneering institute in the field of which is offering M.Phil and Ph.D degrees since then. Keeping in view the acute shortage of specialists it has started offering M.Sc, Postgraduate Diploma and Certificate courses since 1996. The institute provides excellent air-conditioned lecture hall, environmental laboratories, library and audiovisual facilities for the students. It is recognized as a technical focal point on environmental health activities of WHO/EMRO and has been organized WHO sponsored Workshops related to various environmental health and pollution problems with the collaboration of the Ministry of Health.

Therefore, there is a need to evolve and develop a course at the post-graduate level, which will involve the elements and fundamental principles of medicine, engineering and science for the solution of environmental problems and issues with a practical approach for solving such problems of developing countries. In other words the proposed M.Sc., degree in Environmental Science will bridge the gap that exists between courses in Community Medicine and Public Health and Environmental Engineering.

Facilities

The center is equipped with advanced laboratories, updated libraries and modern equipment that helps in researching on the global issues.

Specific Research Areas

Global Climate Changes Climate Change impacts in Pakistan Designing and Developing low cost waster water treatment and disposal systems for small and medium size communities Agriculture sustainability through the use

of treated waste water Treatment of water for potable use
 Public health aspects of waste water treatment, disposal and reuse Development environmental health programs for monitoring and surveillance of water supply and sanitation Industrial pollution control and management
 Environmental impact Assessment Marine Pollution control Ecological studies Biodegradation of hazardous waste

Career Opportunities

After completing two years (04 Semesters) degree program of M.Sc. the graduates would be able to take up managerial, technical and consultative responsibilities in various industries, multinationals, civic agencies, consulting firms, public health laboratories and organizations, environmental regulatory bodies, educational and research institutions and environmental Protection agencies (EPAs). The M.Sc. is the most appropriate and unique post graduate Program for the in-service professionals who have the above mentioned qualified and would like to improve and advance their professional skills. The lecture also will be directed and conducted by the adjunct international faculty especially from North America.

Faculty Members

Prof. Dr. Tariq Masood Ali Khan
 Dr. Moazzam Ali Khan (Director)
 Dr. Omm-e-Hany
 Dr. Zafar Iqbal Shams
 Ms. Suriya Jabeen
 Mr. Waqar Ahmed
 Ms. Noor Fatima
 Mr. Aamir Alamgir

Programs Available

M.Sc in Environmental Studies
 Diploma in Environmental Sciences (PGD)

For Further Details

Telephone: 021-99261300-06 Ext: 2305
Direct: 021-99261386

Department of

Health & Physical Education

Introduction

The Department of Health & Physical Education, University of Karachi was established in 1996. Initially it introduced one year Masters Program in Physical Education after Bachelor of Physical Education (B.P.ED). The 2 year Masters in Health and Physical Education was introduced in 2001. The department introduced 4 years B.S / B.Sc. (Hons.) Program in January 2012.

The Department of Health & Physical Education provides students with knowledge and skills to enable them to achieve a high degree of autonomy in developing and maintaining their physical, mental, social and emotional health. The subject matter focuses on the importance of a healthy lifestyle and physical activity in the lives of individuals and groups in society.

Facilities

The department is equipped with all the required practical facilities. A variety of sports facilities including playing fields for cricket, hockey, football and athletics, a squash court and indoor game facilities in the gymnasium are also available.

Every year competitive sports for both male and female students are organized at inter-departmental, inter-college and inter-university levels through a variety of sports like hockey, football, cricket, badminton, athletic etc.

The department plans to establish a fully equipped Human Performance Laboratory to incorporate the latest techniques and performance analysis methodologies.

Specific Research Areas

The Health & Physical Education has a broader scope for research in the field of Kinesiology; Exercise Physiology, Socioeconomic impact of Physical Education, Curriculum development etc.

The basic and applied research can be done in the field of Kinesiology, Exercise Physiology and other subjects.

Due to the availability of a wide variety of topics, both qualitative & quantitative research can be done easily.

Career Opportunities

After obtaining graduation degree in the field of Health & Physical Education, the graduates can teach physical education in public and private schools, coach school-based sports and work in many other sports and recreation related careers.

A master's degree in Health and Physical Education will prepare graduates to teach physical education at a public and private high school/college/University or become a Director/Deputy Director of Physical Education Program or become an athletic trainer or a fitness instructor.

Faculty Members Assistant Professors

Dr. Basit Ansari (Incharge)
Mr. Mazahir Zia Shaikh

Lecturers

Ms. Shazia Tabassum
Mr. Humayun Imran Azeemi
Mr. Kunwer M. Asif
Mr. Wasif Nisar

Program Available

M.Sc in Health & Physical Education

For Further Details

Telephone: 021-99261300-06 Ext: 2263
Website: www.uok.edu.pk
Email: hps@uok.edu.pk

Department of

Mathematical Sciences

Introduction

The Department of Mathematics was established in 1956. Prof. Dr. Suleman Kerawala was the Founder Chairman. The department has been renamed as the Department of Mathematical Sciences. Many new courses including Applied Abstract Algebra, Bio-mathematics and Anthro-mathematics have been introduced to highlight the application of Mathematics in different fields. The mission of the department is to bring life to Mathematics and Mathematics to life. Areas of Pure Mathematics, Applied Mathematics and Interdisciplinary Mathematics are being pursued in teaching and research. At all levels, students are instructed in the rigor and precision characteristics of Mathematical Reasoning. They are facilitated to become acquainted with the elementary tools of Mathematics and the techniques to use them.

Facilities

The department offers peaceful environment and provides all modern facilities to students. This is the second largest Department of the Faculty of Science, with three story building consisting of many rooms, well equipped auditorium, E-laboratory with free internet facility and E-library having three thousand books. To keep the students informed and updated with the latest development in the modern era, department organizes seminars and workshops for faculty members/students and also allow them to participate in such events both within and outside the university.

Specific Research Areas

The faculty Members and Students actively participate in local, national and international Mathematical activities and conferences. The Faculty is engaged in research in the following areas:

Algebra Astro-dynamics Biomathematics & Bioinformatics Climatology Fluid Dynamics Math-Education Controls and Simulation
Mathematical Physics Numerical Analysis Operational Research Relativity and Gravitation The Ph.D. program facilitates young researchers in getting the experience necessary to do original research in areas of their interest. About Sixty researchers are enrolled in this program.

Career Opportunities

Our graduates have been employed in the Educational, Financial, Industrial and Commercial Institutes. They can opt for any for the following professionals: High School Maths Teacher, College Maths Professor, Actuary, Software Designer, Biostatistician, Govt. Lab. Researcher, Financial Analyst, Industry Analyst/Engineer, Education Materials Developer, Industry Consultant.

Faculty Members

Professors

Dr. Syed Arif Kamal (Chairman)
Dr. Sarwar Jahan Abbasi
Dr. Rana Khalid Naeem
Dr. Syed Anwar Ali Zaidi

Assistant Professors

Ms. Rehana Shakeel
Ms. Akhtar Jehan
Dr. M. Jawed Iqbal
Mr. Waseem A. Khan
Mr. Waseem A. Ansari
Mr. Tanveer A. Siddiqui
Mr. M. Imtiaz
Ms. Naveeda Qamar
Mr. Mushtaq Ahmed
Mr. Javed Ansari
Ms. Syeda Sadia Zia
Ms. Saba Naz
Mr. S. Inayatullah
Mr. Najeeb Alam Khan
Dr. Khurram Kamran

Lecturers

Mr. Asif Raza Khan (S/L)
Mr. Shahid
Mr. M. Ayaz
Mr. Asif Iqbal
Ms. Mehwish Shafi Khan
Ms. Asma Rani
Ms. Hafsa Ather Jafree
Ms. Hina Zaheer
Ms. Noor Fatima Siddiqui

Programs Available

M.Sc. in Applied Mathematics
M.Sc. in Industrial Business Mathematics

For Further Details

Telephone: 021-99261300-06 Ext: 2293
Website: www.domsku.com

Department of

Microbiology

Introduction

Microbiology is a broad discipline which has both basic and applied aspects. Therefore, microbiologist must have good understanding about microbial taxonomy, genetics, immunology and physiology in order to identify these agents, utilize their metabolic potential on commercial levels and to manipulate these organisms for the betterment of humanity. The study of microorganisms and their potential is necessary for production of bread, cheese, antibiotics, vaccines, vitamins and many other important products and processes. They are also involved in causing serious infections in human, animals and plants, causing directly or indirectly human sufferings.

The Department of Microbiology was established in 1957. This was the first and only Department of Microbiology for many years, in this country, offering undergraduate and postgraduate degrees.

Because the importance of the subject and its applicability, this department is now regarded as one of the best department within the Faculty of Science. As a result this department has become popular and a large number of students opt. to study Microbiology.

Facilities

Laboratory and Lecture Rooms:

The department has 10 laboratories and 3 lecture hall/rooms where theory and practical classes are held. In addition to this, there are 3 preparation rooms and a cold room.

Computer Lab.:

The lab with internet facility is available to all students.

Specific Research Areas

Research scholars are working on exceptionally diverse area of microbiology including various field in biochemistry, genetics, clinical microbiology, mechanisms of virulence, epidemiological studies, studies on microbial enzymes of industrial importance, biotransformation studies, studies on bioactivities of microbial metabolites, immunological aspects of diagnosis, molecular aspects of disease diagnosis and microbe identification, bacteriocin, bioactivities of natural products, molecular biology of phages, biodiversity and Environment and many others.

Career Opportunities

A person with M.Sc. in Microbiology has wide choices of employment opportunities especially in one of the following organizations:

Pathological/Clinical/Hospital Lab. Food products and beverages industry Dairy and Agriculture

Pharmaceutical products industry Biotechnology
product industry KWSB/KMC R&D institutions
University/Colleges teaching & research Diagnostic
monitoring programs Environmental Programs

Faculty Members

Professors

Dr. Shahana Urooj Kazmi
(Dean, Faculty of Science)
Dr. Aqeel Ahmed (Chairman)
Mr. S.M.Khalid
Dr. Tasneem Adam Ali
Dr. Shakeel A. Khan
Dr. Fasihuddin A. Ansari

Associate Professors

Ms. Nayyar Jahan
Ms. Talat Yasmeen Mujahid

Assistant Professors

Dr. M. Sohail
Ms. Nayyara Mehmood
Dr. Samia Ahmed
Dr. Tanveer Abbas
Dr. S. Abdus Subhan
Dr. Asma Saeed
Dr. Fouzia Haider
Dr. Abdul Wahab
Dr. Zaid A. Prizada
Dr. Asma Naeem
Dr. Adnan Khan
Dr. Muneera Naz Balouch
Mr. Tariq Tayyab

Lecturers

Ms. Anjum Zehra (SL)
Ms. Sadaf Jahangir (SL)
Ms. Amna Alam
Ms. Sana Ajaz
Ms. Tasneem Akhtar
Ms. Wajeeha Binte Asad
Ms. Sadia M. Saleemullah Khan

Program Available

M.Sc in Microbiology

For Further Details

Telephone: 021-99261300-06 Ext: 2248

Department of

Petroleum Technology

Introduction

Petroleum Technology program of the University of Karachi was initiated in 1996 in the evening program, while in the morning program it was introduced in 2004. The program aims to meet the future technical and professional requirements in petroleum industry. It is a multi disciplinary program of the Faculty of Science/Engineering organized in collaboration with petroleum industry.

The program aims to impart theoretical and practical knowledge in upstream and downstream activities of petroleum industry such as chemistry, geology, drilling, exploration, production, reservoir, pipeline, corrosion, natural gas, LGP and refining technologies, environmental impact, health & safety designs, petroleum logistics, marketing and management.

Presently a two year (four semester) M.Sc program of 60 credit hours with 20 courses of 3 credit hours each is being offered.

Facilities

Internship and training programs are arranged for students in various sectors of oil and gas industries such as oil companies, refineries and service companies, such as, Pakistan Oilfield Limited, Oil and Gas Development Corporation, National Refinery, Pakistan Refinery, Pak Arab Refinery, Bosicar Refinery, Pakistan State Oil Ltd, Shell Pakistan, Eni Pakistan, Sui Southern Gas Co. Ltd., Baker Hughes, Halliburton Ltd., Marathon Construction, MariGas, MOL Pakistan Oil & Gas Co., Nuricon, OMV Pakistan etc. This will help in preparing prospective candidates for petroleum industry.

Career Opportunities

Students obtaining a Master's degree in Petroleum Technology can easily get jobs in Pakistan, middle East and other countries. A Petroleum Technologist is required by petroleum industry at every stage i.e. exploration and development of oil and gas fields, transportation and distillation of crude in refineries, distribution and marketing of its products.

Faculty Members

Professor

Dr. Majeed Ullah Qadri (Chairman)

Lecturers

Mr. Kashif Sadiq

Mr. Waqas Ahmed

Eng. S. Hasan Abbas Zaidi

Mr. Syed Ghufran Alam

Programs Available

M.Sc in Petroleum Technology

Diploma in Petroleum Technology

For Further Details

Telephone: 021-99261300-06 Ext: 2418/2370

Website: www.uok.edu.pk

Email: pt@uok.edu.pk

Department of Physics

Introduction

The department of physics is one of the pioneer department of the University of Karachi. Prof. Dr. Mujtaba Karim was the founder chairman of the department. Since its inception, the Department of Physics is actively engaged in imparting quality education in the field of Physics and is actively engaged in research activities.

Facilities

Beside teaching laboratories, the department has a number of other laboratories for research purpose.

Below is the list of some facilities:

Spectroscopy Research Lab.
Solid State Research Lab.
Condensed matter Research Lab.
Fully equipped Electronics Lab.
A well equipped computer Lab.
A liquid Nitrogen plant
Dr. Shaikh Ansar Hussain Seminar Library.

Specific Research Areas

The Department engaged in a number of research areas such as:

Spectroscopy of atoms and molecules
Material Science
Environmental Science
Electronics
Theoretical Physics
Space Physics

Career Opportunities

There are ample opportunities for employment both in National and International research organizations. The names of few national organizations are: Pakistan Atomic Energy Commission, PIEAS, KANUPP, PCSIR, SUPARCO, Pakistan Steel Mills etc. Beside these Government organizations and institutes, our graduates also have good employment opportunities in private sector as well.

Faculty Members

Professors

Dr. Tehseen Rahim (Chairman)
Dr. M. Altaf Hussain

Associate Professor

Mr. Naseeruddin

Assistant Professors

Dr. Shahid Mehmood
Dr. Shabana Rizvi
Dr. Imran A. Siddiqui
Dr. Zaheeruddin (FSL)
Mr. S. Zeeshan Abbas
Dr. Saifuddin A. Jilani (T)
Dr. Intikhab Ulfat

Lecturers

Ms. Rabia Najam
Mr. Asim Ajaz
Mr. Hafiz M. Sohail (SL)
Mr. Shaikh M. Zeeshan Iqbal
Ms. Sadaf Fatima
Mr. Ommair Ishaque
Mr. Waqar Ahmed
Mr. Ibrahim M. Babar
Ms. Rizwana Siddiqui
Mr. Kamran Ul Haq
Mr. Zuhoor Ilahi
Mr. Imran Ahmed

Program Available

M.Sc in Physics (with specialization in electronics and communication)

For Further Details

Telephone: 021-99261300-06 Ext: 2250
Website: www.uok.edu.pk

Department of

Physiology

Introduction

The department of physiology is an important segment of the Faculty of Science. University of Karachi and occupies a very prominent place in the modern age of Biosciences, Clinical/Biomedical Sciences and other Applied Biological Science. Founded by Prof. Dr. M. H. Qazi in 1964, the Department of Physiology was the first department outside medical colleges to introduce teaching and research programs in Basic and Experimental Physiology at the Graduate and postgraduate levels. Currently, the department has 21 faculty members, 17 supporting staff members and more than 1000 students including both the Major and Minors. Several renowned Professors are the pioneer faculty members of the Department and are presently serving on key posts in various organizations.

Facilities

The Department has sufficient facilities necessary to run the academic and research activities and includes:

Well equipped labs for students & researchers

Audiovisual aids like over head projectors, multimedia, camera and television for interactive teaching

A well organized Seminar Library with up to date text books and references on various disciplines of physiology

Basic & ultimate Power Labs for laboratory experiments & demonstrations.

Computer facilities are available in all special units for researchers. A separate computer laboratory with 12 computers is available for academic & research activities.

Internship facilities for students in different organizations is available.

Specific Research Areas

A great deal of research at M.Phil & Ph.D. levels is conducted in different disciplines of Physiology, such as Neuromuscular Physiology, Hematology, Molecular Physiology & Biophysics, Molecular & Clinical Endocrinology and Reproduction and Poultry Physiology, which is being done in collaboration with K&Ns Poultry diagnostic & research Laboratory. Currently, more than 25 research scholars are registered in M.Phil & Ph.D. programs in various disciplines including clinicians from hospitals and medical universities.

Blood disorders; Endocrine/Metabolic & Reproductive abnormalities, especially, Diabetes mellitus, Metabolic Syndrome, Infertility, PCOS, Breast Cancer; Reproductive changes in marine models; Poultry Vaccinology, diseases and molecular studies of disease mechanism, Neuromuscular disorders, Oxidative stress.

Career Opportunities

Physiology is the core of medical research being done all over the world. Dozens of foreign scholarships for advanced studies in physiology. Physiologists are required in a number of places, like, pharmaceutical industry, health monitoring departments, biosynthetic industry, instrumentations in biomedical sciences, health related organizations, population welfare division, agriculture, livestock and poultry industry, diagnostic labs., occupational therapies, physiotherapy centers, nutritional/sports centers, radiological institutions, biotechnology, bioinformatics, bioengineering, synthetic biology, nursing, medical universities, hospitals, research and teaching institutions.

Faculty Members

Professors

Ms. Qamar Amin (Chairperson)

Dr. Zaheer Hussain

Assistant Professors

Dr. Ruqaiya Hasan (FSL)

Ms. Aisha Javed

Dr. Habib Fatima

Ms. Arifa Savanur (S/L)

Dr. Taseer A. Khan

Ms. Ambreen Niazi

Mr. Zulfiqar Ahmed

Ms. Nazish Iqbal Khan

Ms. Lubna Naz

Mr. Anwar Ali

Ms. Sadaf Ahmed

Ms. Ghazala Yasmeen

Lecturers

Ms. Sumera Sohail

Mr. Mudassir H. Rizvi

Ms. Saima Mushtaq

Ms. Uzma Firdous

Ms. Mehrunisa Iqbal

Mr. Faizan Mirza

Mr. M. Nisar

Program Available

M.Sc in Physiology

For Further Details

Telephone: 021-99261300-06 Ext: 2296

Website: www.uok.edu.pk

Institute of

Space & Planetary Astrophysics

Introduction

Today we live in an era characterized by high-Q technology and microgravity science on the Earth managed by observations and experiments in Outer Space. Space technology is being used dynamic traffic information, air traffic control, navigation, communication via satellite (GNSS). e-marketing monitoring, precision agriculture, planing & management of land use, mining, public safety & disaster management and plate tectonics. Thus Space technology applications act as a catalyst in socio-economics development of the society.

The Institute of space & planetary astrophysics has the primary objective to promote Space Science Education in Pakistan. The mission is to carry out basic and applied research in the fields of Space Science for modeling the challenges of in indigenous development of human resource and reliable training facilities for technologies and sciences of info age. The M.Sc. (Space Science) Curriculum is designed in compliance with international standards, emerging technologies, and to meet the indigenous requirements of Pakistan.

Facilities

ISPA Observatory: The observatory is equipped with a 6 inch Code Refractor telescope of German make with excellent photographic facilities. We have also one movable telescope.

Computer Lab: The computer lab is equipped with space science related software.

GIS Lab
Digital Library

GPS Lab
Seminar Library

Specific Research Areas

Astronomy / Planetary Physics.
Astrophysics (Cosmology, Galactic Physics,
Solar Physics etc.)
GIS and Remote Sensing.
Flight Dynamics & Aerodynamics
Atmospheric Science (Meteorology, Climate Change
Study etc.)
Renewable Energy
Global Navigation Satellite System (GNSS).

Our graduates of M.Sc in Space Science will have job opening in SUPARCO, NESCOM, National Institute of Oceanography, Civil Aviation Authority, PIA, Pakistan Meteorological Department, National Telecommunication Corp., Pakistan Telecommunication Corp. Ltd., Sui Southern Gas Company Ltd. and Oil & Gas Development Ltd. etc.

Faculty Members

Assistant Professors

Dr. M. Javed Iqbal (Incharge)
Dr. M. Shahid Qureshi (FSL)
Mr. Mirza Jawwad Baig
Mr. Naeem Sadiq
Mr. M. Anas

Program Available

M.Sc in Space & Planetary Astrophysics

For Further Details

Telephone: 021-99261300-06 Ext: 2443
Website: www.ispa-ku.com

Career Opportunities

Department of Statistics

Introduction

The Department of Statistics, University of Karachi was established in the year 1963. Both in terms of physical facilities and academic facilities the Department of Statistics is one of the most popular department within the university.

Facilities

The department has a seminar library stocked with a number of latest and good books on all branches of statistics. The library has also a large collection of statistical publications of national and international organizations. The students and researchers are also using the facilities of data bank in the department that has several computer labs. having more than 100 computers.

Well equipped Computer Laboratories with an environment of networking and statistical packages such as SAS, SPSS, R, etc. are available for students and researchers.

Career Opportunities

The opportunities are open for the Students of Statistics and Actuarial Sciences and Risk Management in all fields including banks, industries, Government Organization (FBS, SBS, PBS, State Bank etc). Research Organizations, insurance and investment fields.

Specific Research Areas

Astronomy / Planetary Physics.

Astrophysics (Cosmology, Galactic Physics, Solar Physics etc.)

GIS and Remote Sensing.

Flight Dynamics & Aerodynamics

Atmospheric Science (Meteorology, Climate Change Study etc.)

Renewable Energy

Global Navigation Satellite System (GNSS).

Faculty Members Professors

Dr. Mudassir Uddin (Chairman)
Mr. S. Afrozuddin Ahmed

Associate Professors

Dr. Ehtesham Hussain
Mr. M. Aslam

Assistant Professors

Dr. Javed Iqbal
Ms. Rafia Shafi
Dr. Farah Yasmeen
Ms. Samreen Fatima
Ms. Bushra Shamshad
Ms. Arfa Maqsood
Ms. Suboohi Safdar

Lecturer

Ms. Sara Azhar

Program Available

M.Sc. in Applied Statistics

For Further Details

Telephone: 021-99261300-06 Ext: 2298

Website: www.uok.edu.pk

Department of Zoology

Introduction

The department of zoology was established in 1951 and now it holds a pivotal position in the Faculty of Science. Right from its inception, the department has been imparted quality education at B.Sc & M.Sc. levels. It also provides facilities of post-graduates research leading to M.Phil and Ph.D. degrees. We are proud to mention that more than two thousand (2000) research papers of the faculty members of zoology have been published in National and International research journals. Beside the publication of research papers, our faculty members' books have also been published. There are around forty books that have been published.

Facilities

The Department has a Computer Lab. and Instrument Labs. of Toxicology and Hydrology containing Atomic Absorption HPLC, Autoclave and GLC, Coulter counter, Graphite Furnace, colorimeter, spectrophotometer & latest microscopic photographic system. In addition to the instrument Labs, the department has a zoological museum which occupies a special place among the museums of Pakistani the universities of Pakistan. It has a huge collection of vertebrates and invertebrates from James Murray's collection and substantial collection of fresh water and Marine fauna of Arabian Sea, Persian Gulf and Indian Ocean. During the past 61 years a considerable addition of insects from various areas of Pakistan, Bangladesh including Oriental Trans-Himalayan (Palaearctic) and Ethiopian forms from Lasbella and Mekran Coast, have been added. Work on fish taxonomy (fresh water and marine), protozoans helminthes, insects and other arthropods is undertaken by trained and experienced staff. The department is also working in collaboration with outstanding taxonomists in Japan, Europe, USA and Canada.

Specific Research Areas

The department also gives opportunity for research to the students, who wish to specialize in Applied Zoology, Entomology, Limnology and fresh water Fishery Biology, Marine Zoology, Parasitology and Wildlife Fisheries. More than 80 research projects funded and sponsored by national as well as international agencies have been successfully completed by the faculty members.

Career Opportunities

The graduates of the department, while catering to the needs of the education department are readily hired as teachers of Zoology in schools, colleges, universities and as

subject expert in various Educational Boards. Job opportunities are also available in the department of Agriculture, Plant Protection, Fisheries, Zoological Survey, Zoological Gardens, Safari Parks, Pakistan Council of Scientific and Industrial Research, National Institute of Oceanography, Pakistan Agricultural Research Council, Wild life conservation and management of WWF, IUCN, Public and Private sectors pathological labs.

Faculty Members Professors

Dr. M. Arshad Azmi (Chairman)
Dr. Nasira Khatoon
Dr. Rehana Y. Farooque
Dr. S. Ansar Rizvi
Dr. Musarrat Yousuf
Dr. M. Farhanullah Khan
Dr. Seema Tahir
Dr. M. Zaheer Khan

Associate Professors

Mr. M. Atiqullah Khan
Dr. Rahila Tabassum

Assistante Professors

Ms. Afshan Jabbar Khan
Dr. Farzana Yousuf
Dr. Karim Gabol
Dr. M. Shoib
Dr. Solaha Rahman
Dr. Sumera Farooq (T)
Dr. Ghazala Yasmeen (T)

Lecturers

Ms. Shakila Parveen
Ms. Shahina Rao
Ms. Roohi Kanwal
Ms. Samreen Mirza (S/L)
Ms. Atia Batool

Program Available

M.Sc in Zoology

For Further Details

Telephone: 021-99261300-06 Ext: 2299
Website: www.domsku.com/zoology