



کراچی یونیورسٹی

University of Karachi

Office of Dean, Faculty of Sciences

First Semester 2009

Compulsory Course for MPhil/PhD Students

ASR 702: Research Methodology II (3+0)

Activity	Dates	Class Schedule
Introduction day	February 3	Wed, Sat 1411h – 1540h
Teaching	February 4 – May 9	Council Room, Office of
Mid-term (Presentations)	February 23 – March 7	Dean, Faculty of Sciences
Semester Examinations	May 11–30	Office Hours
Vacations	June 1 – July 15 (Summer)	Friday 1110h – 1149h

Course Coördinator

Prof. Dr. Syed Arif Kamal, *Dept. of Mathematics*

Telephone: 926 1300-6 ext. 2380 (Tue, Thu 1600h – 1700h)

Homepage: <http://ngds-ku.org/kamal>

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Office: Room No. 6, Dept. of Mathematics

Directions: <http://www.ngds-ku.org/kamal/contact.htm#Directions>

Course Faculty

Prof. Dr. Shahana U. Kazmi, *Microbiology & Dean, Faculty of Sciences*

Prof. Dr. Farhat Moazzam, *Center for Biomedical Ethics, SIUT*

Administrative Assistants

Nooruddin, Humaira (ext. 2255)

Course Objectives

To give the students a sound background in the methodology of research, taking the students from simple (scientific record keeping) to complex (critical evaluation of research) topics. Guests from various R&D organizations shall cover specialized topics. After completing this course the students should be able to differentiate good-quality work from poorly-conducted one.

Course Outline

Scientific Record Keeping: Lab notebook, duplicate record, date

Ownership of Data: Institutional property, personal rights, patenting, intellectual-property rights

Handling of Research Material: Placement and storage, utilization, disposal

Public Safety: Health, safety and environmental affairs, potential hazards, risks, accidents, remedies, laboratory design, gadgets

Environmental Conservation: Management of laboratory-environment parameters, humidity, temperature, air quality, illumination, noise

Research Ethics/Informed Consent: Confidentiality, deception, de-hoaxing and desensitization

Efficient Use of Computers and Internet: Search engines, digital libraries, archives

Communication of Science: (Oral) Technical presentation, keynote address, invited lecture, popular lecture; (Written) Language, diction and contemporary style, data presentation and documentation – students are supposed to give one short presentation with accompanying writeup

Research Misconduct: Fraudulent research, plagiarism, retraction and cleansing, legal burdens

Scientific Integrity: Precision, reporting, credits, authorship, mentoring

Critical Evaluation of Research: Accuracy, precision, reproducibility (stability and objectivity), reliability, quality, originality, bias and distortion, non-deliberate bias, sampling bias

Publication: Paper, audience and journal, basic structure of research paper, full-length paper, short communication, notes, case report, review and case-series analysis, editorial, book review, letter to editor

Class Representatives: Tafheem Malik, Huma Ikram, *Biochemistry*, tafheemmalik, huma_biochemist(at the rate of)yahoo.com

For course announcements and assignments, go to *Pedagogical Section*, click on “Courses (offered during the current semester)”. Web addresses of this handout and lecture schedule (including marks breakdown):

<http://www.ngds-ku.org/DFS/ASR702_09.pdf>

<<http://www.ngds-ku.org/DFS/Schedule.pdf>>