



کراچی یونیورسٹی  
*University of Karachi*  
**THE NGDS PILOT PROJECT**  
The NGDS Workshop Series



**Master Trainer**

PROFESSOR DR. SYED ARIF KAMAL

**Improving the Quality of Mathematics Education in Pakistan**

- Aims and Objectives**
- To appraise teachers about state-of-the-art contents and pedagogical techniques in mathematics
  - To develop a state-of-mind in teachers, so that they are constantly seeking new information through the print and the electronic media, as well as educating themselves through discussions and interaction with working scientists
  - To motivate teachers to prepare effective lectures, demonstrations and activities in mathematics using the latest AV- and IT-tools available
  - To train teachers to develop and to conduct quizzes, tests and examinations in mathematics
  - To sharpen their problem-formulating and problem-solving skills in mathematics
  - To involve them in various activities aimed at creating mathematics awareness in our society
  - To provide guidance for chalking out a program of lifelong learning for self in mathematics
  - To assist them in curriculum, textbook and teaching-software development in the subject of mathematics

**The First Workshop**

*Concept Building in Pre-University Mathematics Education*

Wednesday, August 12, 2009 (0950h– 1210h)

**The Second Workshop**

*Efficiently and Effectively Conducting Quizzes, Tests and Examinations in Mathematics*

Wednesday, August 19, 2009 (0950h– 1210h)

**The Third Workshop**

*Problem Solving in Mathematics*

Wednesday, August 26, 2009 (0915h– 1115h)

**Venue**

Beacon Light Academy, 'O' Levels, E-24/7, Gulshan-é-Iqbal, Karachi 75300  
Tel: 3496 9179

**Contact Person**

Mrs. Yasmeen Salman

**Master Trainer**

**Professor Dr. Syed Arif Kamal**

MS (Indiana, Bloomington, USA), MA (Johns Hopkins, USA), PhD (Karachi)  
Professor and Ex-Chairman, Department of Mathematics, University of Karachi  
Convener, National Curriculum Revision Committee for Mathematics,  
Higher Education Commission

*Prepared BS, MS and PhD (mathematics) schemes of studies*

Convener, Subject Committee (Mathematics), National Testing Service

*Developed curricula for nationwide standardized tests*

Member, Expert Panel (Mathematics), National Curriculum Council,  
Ministry of Education, Government of Pakistan

*Reviewed mathematics curricula and textbooks for Classes FXII*

Former Head, Mathematics and Physics, Karachi Grammar School

Former Head, Mathematics and Physics, the Lyceum School (Clifton)

*Reviewed A-level science curriculum for CERD*

**Homepage  
e-mail**

<http://ngds.uok.edu.pk/kamal>  
sakamal(at the rate of)uok.edu.pk



- Previous Trainings Conducted**
- Six-Day-In-Service-Training Course (Mathematics for College Teachers)*  
HEC Regional Office, Karachi, August 16-21, 2004 (Course Coördinator)
- Correction Strategies at the Intermediate Level*  
Commecs Educational Trust, Karachi, April 17, 2004  
(resource person for the module)
- FDP Intensive Workshop*  
Commecs Institute of Business and Emerging Sciences, Karachi, 1999  
(Subject Expert in Mathematics)
- Science Teachers' Training*  
The International School, Clifton, Karachi, 1997 (Master Trainer)
- Selected Talks**
- BS, MS and PhD Schemes of Studies Prepared by NCRC (HEC)*  
Research Seminar, Department of Mathematics, University of Karachi, September 2, 2006
- How to Motivate the Students to Learn?*  
Seminar, the Aga Khan University, January 21, 1998
- The Making of a Physicist*  
The Karachi Physics Society Seminar, FG Urdu Science College, Karachi, November 25, 1986
- Selected Books**
- Mathematics— Revised Curriculum (BS Scheme of Studies)*  
**Kamal SA**, Convener, National Curriculum Revision Committee in Mathematics, Higher Education Commission, Islamabad, Pakistan, 2008 [Editor]
- National Curriculum for General Mathematics— Grades XI-XII*  
**Kamal SA**, Member, Expert Penal, National Curriculum Council, Ministry of Education, Government of Pakistan, Islamabad, Pakistan, 2008  
[National Advisory Committee]
- National Curriculum for General Mathematics— Grades IX-X*  
**Kamal SA**, Member, Expert Penal, National Curriculum Council, Ministry of Education, Government of Pakistan, Islamabad, Pakistan, 2007  
[National Advisory Committee]
- National Curriculum for Mathematics— Grades I-XII*  
**Kamal SA**, Member, Expert Penal, National Curriculum Council, Ministry of Education, Government of Pakistan, Islamabad, Pakistan, 2006  
[National Advisory Committee]
- Mathematics— Revised Curriculum (BS, MS and PhD Schemes of Studies)*  
**Kamal SA**, Convener, National Curriculum Revision Committee in Mathematics, Higher Education Commission, Islamabad, Pakistan, 2005 [Editor]
- Selected Papers**
- The Integrated Educational System: A Pre-University Educational System for the Third Millennium*  
**Kamal SA**, the Sindh Educational Conference, the Jamia Millia Government College of Education, Karachi, Pakistan, 2009 (keynote lecture)
- From Mathematics to Technology: A Bridge Through Physics and Engineering*  
**Kamal SA**, the International Conference on Physics and the World of Today, Department of Physics, University of Karachi, Karachi, Pakistan, 2008, p 32 (invited paper)
- The Training of a Physicist: From Concept Building to Problem- Solving Skills (Concluding Talk + Recommendations of Conference)*  
**Kamal SA**, the Second International Conference on Physics Education, Center of Physics Education, National Center for Physics & Department of Physics, University of Karachi, 2003
- How to Develop Creative Thinking and Critical Analysis?*  
**Kamal SA**, Siddiqui KA, Proceedings of the Second Workshop on Teaching of Physics, Edited by Hasnain AF, Karachi, Pakistan, 1986, pp 51-56