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Project Director, the NGDS Pilot Project[Ⓒ]
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Dean, Faculties of Science & Engg.
Acting Vice Chancellor (April 2-7, 2016)
UNIVERSITY OF KARACHI[&]

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COLLOQUIA, GUEST LECTURES, PRESENTATIONS, SEMINARS AND SHORT COURSES/TECHNICAL TRAININGS

My Philosophy of Life
While there is a will there is a way

NO handwritten notes except original signatures.
VOID unless bears original signatures on every page.
DATE and TIME of printing must match on every page.

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Abbreviations

AKU: The Aga Khan University Medical College, Karachi, Pakistan
FUUAST: Federal University of Arts, Sciences and Technologies, Karachi
HEC: Higher Education Commission, Regional Center, Karachi
IBA: Institute of Business Administration, Karachi
IST: Institute of space Technology, Islamabad, Pakistan
KMDC: Karachi Medical and Dental College, Karachi
KU: University of Karachi, Karachi, Pakistan
SUPARCO: Pakistan Space and Upper Atmosphere Research Commission, Karachi, Pakistan

Colloquia, Guest Lectures, Presentations and Seminars

- Areas covered:
 - ⇒ Guidance, navigation and control in satellite-launch-vehicle-trajectory design
 - ⇒ Mathematical modeling of child growth and obesity
 - ⇒ Mathematical modeling of corruption
 - ⇒ Mathematical concepts in sport sciences and technologies

[Ⓒ]National Curriculum Revision Committee

[Ⓓ]Higher Education Commission, Govt. of Pakistan

[Ⓔ]National Testing Service Pakistan <http://www.nts.org>

[#]American Institute of Aeronautics and Astronautics

[ⓓ]International Brain Research Organization

[ⓓ]The Abdus Salam International Center for Theoretical Physics, Trieste, Italy

[ⓓ]The Early Talent Research Participation Program

[¶]Transparency International Pakistan

^{*}Anthromathematics Group

[§]Department of Mathematics

[Ⓒ]National Growth and Developmental Standards for the Pakistani Children <http://ngds-ku.org>

[Ⓔ]United States (of America)

[&]University of Karachi, Karachi <http://www.uok.edu.pk>

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Signatures _____

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

profdrakamal@gmail.com

Page 1 of 6

- May 20, 2016
Handout
- **G73: Guidance, Navigation and Control Concepts in Armament Design**
<http://www.ngds-ku.org/Presentations/GNC.pdf>
Guest Lecture, Certificate Distribution Ceremony of Ordinance Engineering System Management and Application Course, Ordinance Training School, PNAD, Maripur, Karachi, Pakistan
- Update:* July 1, 2016
Given, coverage in Navy News, June 2016, page 3 — Urdu Section
- May 17, 2014
Handout
- **G72: Sports and Anthromathematics**
http://www.ngds-ku.org/Presentations/Sport_Mathematics.pdf
Seminar, 55th Annual Prize Distribution Function, Government College, Hyderabad, Pakistan
- April 15, 2014
Handout
- **G71: Astromathematics**
<http://www.ngds-ku.org/Presentations/Astromathematics14.pdf>
Seminar, Government Degree College for Men, Nazimabad, Karachi, Pakistan
- April 10, 2013
Handout
- **G70: Anthromathematics: Mathematics of the Third Millennium**
<http://www.ngds-ku.org/Presentations/AMTM.pdf>
Research Seminar, Department of Mathematics, Federal University of Arts, Sciences and Technologies (FUUAST), Gulshan-é-Iqbal Campus, Karachi, Pakistan
- May 6, 2012
Handout
- **G69: Anthromathematics in the Service of Community Medicine**
<http://www.ngds-ku.org/Presentations/KMDC.pdf>
Clinical Seminar, Department of Community Health Sciences, Karachi Medical and Dental College (KMDC), Karachi, Pakistan
- May 28, 2011
Handout
- **G68: Intelligent Power, Conflict Resolution, Complexity and International Trade**
<http://www.ngds-ku.org/Presentations/IBA.pdf>
Seminar, Institute of Business Administration (IBA), City Campus, Karachi, Pakistan
- March 31, 2011
Handout
- **G67: Intelligent Power and Conflict Resolution**
<http://www.ngds-ku.org/Presentations/IR05.pdf>
Seminar, Department of Political Science, University of the Punjab, the Quaid-é-Azam Campus, Lahore, Pakistan
- February 19, 2011
Handout
- **G66: From Anthropometry to Anthromathematics**
<http://www.ngds-ku.org/Presentations/Ziauddin.pdf>
Faculty of Medicine Research Seminar, the Ziauddin University, Clifton Campus, Karachi, Pakistan
- November 4, 2010
Announcement
- **G65: My Journey of Life: Challenges and Opportunities**
<http://www.ngds-ku.org/Presentations/PAS.pdf>
Guest Scientist, the Pakistan Academy of Sciences Karachi Chapter Program, the LEJ National Science Center, KU
- September 29, 2010
Handout
- **G64: Soft Power, Smart Power and Intelligent Power**
<http://www.ngds-ku.org/Presentations/IR04.pdf>
Seminar in Honor of Joseph Nye, Graduate Studies Discussion Group, Department of International Relations, KU
- March 11, 2010
Handout
- **G63: Simulation and Soft Power**
<http://www.ngds-ku.org/Presentations/IR03.pdf>
Seminar, Graduate Studies Discussion Group, Department of International Relations, KU
- October 22, 2009
Handout
- **G62: Role of Information Processing in Conflict Resolution**
<http://www.ngds-ku.org/Presentations/IR02.pdf>
Seminar, Graduate Studies Discussion Group, Department of International Relations, KU
- January 24, 2009
Event Highlights
Handout
- **G61: Role of Mathematics in the Clinical Sciences**
<http://www.ngds-ku.org/Presentations/ICCBS.htm>
<http://www.ngds-ku.org/Presentations/ICCBS.pdf>
Seminar, the International Center for Chemical and Biological Sciences (ICCBS), KU
- August 29, 2008
- **G60: Mission Design for Satellite-Launch Vehicle**
Concluding Session, Professional Development Short Course, Department of Aeronautics and Astronautics, IST

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|---|---|
| August 16, 2008
<i>Handout</i> | <ul style="list-style-type: none"> • G59: Technical Aspects of Preparing a Research Proposal
 http://www.ngds-ku.org/Industrial/proposals.htm
 Presentation, Workshop on Preparing Research Proposals,
 Office of Dean, Faculty of Science, KU |
| May 9, 2008
<i>Handout</i> | <ul style="list-style-type: none"> • G58: Mission Design for Satellite-Launch Vehicle
 http://www.ngds-ku.org/Presentations/UIT.pdf
 Research Seminar, the Usman Institute of Technology, Karachi |
| March 29, 2008
<i>Handout</i> | <ul style="list-style-type: none"> • G57: The Direction of Qibla (Makka)
 http://www.ngds-ku.org/Presentations/Qibla.pdf
 Research Seminar, Department of Geography, KU |
| November 8, 2007
<i>Event Highlights</i>
<i>Handout</i> | <ul style="list-style-type: none"> • G56: Presentation Skills
 http://www.ngds-ku.org/Professional/HEC01.htm
 http://www.ngds-ku.org/Professional/HEC01.pdf
 Guest Lecture, HEC Regional Center, Karachi |
| September 8, 2007 | <ul style="list-style-type: none"> • G55: Guidance, Navigation and Control of Satellite-Launch Vehicle
 Research Seminar, Department of Physics, KU |
| August 30, 2007
<i>Event Highlights</i>
<i>Handout</i> | <ul style="list-style-type: none"> • G54: Communication Skills in International Relations
 http://www.ngds-ku.org/Professional/IR01.htm
 http://www.ngds-ku.org/Professional/IR01.pdf
 Seminar, Golden Jubilee Seminar Series, Graduate Studies Discussion Group,
 Department of International Relations, KU |
| May 30, 2007 | <ul style="list-style-type: none"> • G53: The NGDS Pilot Project: A Bioinformatics Perspective
 Research Seminar, Bahria University, Karachi |
| May 11, 2007 | <ul style="list-style-type: none"> • G52: Astrodynamics and Flight Dynamics
 Concluding Session, Professional Development Short Course, Training Division,
 SUPARCO (Plant), Pakistan Space and Upper Atmosphere Research Commission,
 Karachi |
| September 21, 2006 | <ul style="list-style-type: none"> • G51: The NGDS Pilot Project: Growth and Development of the Pakistani Children
 Research Seminar, Department of Special Education, KU |
| September 14, 2006
<i>Event Highlights</i>
<i>Handout</i> | <ul style="list-style-type: none"> • G50: Time Management
 http://www.ngds-ku.org/Professional/TM.htm
 http://www.ngds-ku.org/Professional/Notes04.pdf
 Professional-Skills-Development Seminar, Department of Mathematics, KU — Chief
 Guest: Registrar, KU |
| September 2, 2006 | <ul style="list-style-type: none"> • G49: BS, MS and PhD Schemes of Studies Prepared by NCRC (HEC)
 Research Seminar, Department of Mathematics, KU — Chief Guest: Dean, Faculty of
 Science, KU |
| August 19, 2006 | <ul style="list-style-type: none"> • G48: Guidance, Navigation and Control of Spacecraft
 Concluding Session, Professional Development Short Course, Department of
 Aeronautics and Astronautics, IST |
| August 5, 2006 | <ul style="list-style-type: none"> • G47: An Overview of Astrodynamics
 MPhil/PhD Seminar, Department of Mathematics, KU |
| July 29, 2006 | <ul style="list-style-type: none"> • G46: Control Laws for Spacecrafts and Satellites
 Research Seminar, Department of Mathematics, KU |
| March 30, 2006
<i>Event Highlights</i>
<i>Handout</i> | <ul style="list-style-type: none"> • G45: Goal Setting
 http://www.ngds-ku.org/Professional/Goal.htm
 http://www.ngds-ku.org/Professional/Notes03.pdf
 Professional-Skills-Development Seminar, Department of Mathematics, KU
 — Chief Guest: Former Division Chief, United Nations Capital Development Fund |
| March 16, 2006 | <ul style="list-style-type: none"> • G44: Presentation Skills
 Professional-Skills-Development Seminar, Department of Mathematics, KU |
| March 4, 2006 | <ul style="list-style-type: none"> • G43: The ICP Model of Child Growth (Concluding Remarks)
 Research Seminar, Department of Mathematics, KU |
| February 23, 2006 | <ul style="list-style-type: none"> • G42: Communication Skills
 Professional-Skills-Development Seminar, Department of Mathematics, KU |

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- February 20, 2006
Handout
- G41: The NGDS Pilot Project: Is Your Child Growing All Right?
<http://www.ngds-ku.org/BLA/Handout.pdf>
Presentation, Beacon Light Academy, Karachi
- February 11, 2006
- G40: Research-Proposal Writing
Research Seminar, Department of Mathematics, KU
- October 26, 2005
- G39: The NGDS Pilot Project: Generating Growth Profiles of Children and Monitoring Spinal Curvatures
Seminar, Department of Pediatrics, Dow University of Health Sciences, Karachi
- August 27, 2005
- G38: The NGDS Pilot Project: Methods to Generate Detailed Growth Profile and Monitor Spinal Curvatures in Children
Seminar, Departments of Pediatrics and Orthopedic Surgery, Frontier Medical College, Abbottabad, KP, Pakistan
- August 26, 2005
- G37: Astrodynamics for Space Technologists
Concluding Seminar, Professional Development Short Course, Department of Aeronautics and Astronautics, IST
- August 6, 2005
- G36: Department of Mathematics, University of Karachi: Challenges and Opportunities for the Twenty-First Century and the Third Millennium (Opening Remarks)
Guest Research Seminar, Department of Mathematics, KU— Chief Guest: Vice Chancellor, KU
- July 30, 2005
- G35: Mathematical Modeling of Growth of Children (Concluding Remarks)
Research Seminar, Department of Mathematics, KU
- March 14, 2005
- G34: Interviewing Skills
(behavior-based interviewing: from the perspective of interviewee as well as Interviewer) MIBM Seminar, Department of Mathematics, KU
- February 8, 2005
- G33: Higher Education and Research in Mathematics at University of Karachi: Challenges and Opportunities
MPhil/PhD Seminar, Department of Mathematics, KU
- January 17, 2005
- G32: Industrial and Business Mathematics at University of Karachi Research, Teaching and Professional Exposure: Challenges and Opportunities
MIBM Seminar, Department of Mathematics, KU
- January 15, 2005
- G31: Mathematics Research and Teaching in University of Karachi: Challenges and Opportunities
Research Seminar, Department of Mathematics, KU
- January 13, 2005
- G30: How to Become a Good Presenter?
Students' Seminar, Department of Mathematics, KU
- July 31, 2004
- G29: Win the Interview: Win the Job
Students' Seminar, Department of Mathematics, KU
- March 22, 2004
- G28: The NGDS Pilot Project: Controlling Growth of a Child
Seminar, Postgraduate Teaching Program, Department of Pediatrics, the Nishtar Medical College, Multan, Pakistan
- February 7, 2004
- G27: The Covariant-Generalized-Coupling Model of Global Electrocardiac Activity
Research Seminar, Department of Mathematics, KU
- January 19, 2004
- G26: Presentation Skills to Persuade
Students' Seminar, Department of Mathematics, KU
- January 17, 2004
- G25: Effective Presentations
MIBM Seminar, Department of Mathematics, KU
- May 6, 2003
- G24: The NGDS Pilot Project: Modeling Growth of the Future PAF Officers
Seminar, Air War College, PAF Base 'Faisal', Karachi
- March 8, 2003
- G23: The NGDS Pilot Project: Anthropometry and Growth Modeling of the Pakistani Children
Research Seminar, Faculty of Pharmacy, KU
- March 5, 2003
- G22: Generalized-Coupling Model of Global Electrocardiac Activity
Research Seminar, Division of Biological and Biomedical Sciences, AKU

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|-------------------|---|
| January 22, 2003 | • G21: The NGDS Pilot Project: Anthropometry and Growth Modeling of the Pakistani Children
Research Seminar, Division of Biological and Biomedical Sciences, AKU |
| October 16, 2002 | • G20: The NGDS Pilot Project: Documenting and Modeling Growth of the Future Army Officers
Presentation, Army Public School, 'O' Levels, Karachi |
| April 24, 2002 | • G19: The NGDS Pilot Project: Documenting and Modeling Growth of the Pakistani Children
Seminar, Postgraduate Teaching Program, Department of Pediatrics, AKU |
| January 26, 2002 | • G18: The NGDS Pilot Project: Modeling Growth of the Pakistani Children
Presentation, Fazaia Degree College, PAF Base 'Faisal', Karachi |
| December 7, 2001 | • G17: The NGDS Pilot Project: Anthropometry of the Pakistani Children
Presentation, Aureole High School, Karachi |
| March 19, 1998 | • G16: Image Processing in the Business, the Medicine and the Industry
Seminar, Hamdard Institute of Management Sciences (HIMS), Hamdard University, Karachi |
| March 12, 1998 | • G15: Mathematical Modeling in the Business
Seminar, Hamdard Institute of Management Sciences (HIMS), Hamdard University, Karachi |
| March 7, 1998 | • G14: 3-D Optical Imaging and Image Processing: Biomedical Applications
MIBM Seminar, Department of Mathematics, KU (coverage in April 1998 issue of the MEDICINE International) |
| January 21, 1998 | • G13: How to Motivate the Students to Learn?
Seminar, AKU |
| October 21, 1995 | • G12: 3-D Optical Imaging and Image Processing
MIBM Seminar, Department of Mathematics, KU |
| October 7, 1995 | • G11: The Application of Mathematics to Rocketry
MIBM Seminar, Department of Mathematics, KU |
| August 3, 1995 | • G10: A Mathematical Model of the Brain
MIBM Seminar, Department of Mathematics, KU |
| July 3, 1993 | • G09: 3-D Optical Imaging: Medical Applications
Guest Lecture, the Baqai Medical College, Karachi |
| July 11, 1991 | • G08: 3-D Optical Imaging: Medical Applications
Guest Lecture, AKU |
| July 16, 1990 | • G07: 3-D Optical Imaging
Summer Luncheon Seminar, Harvard-MIT Center for Biomedical Engineering, Massachusetts Institute of Technology, Cambridge, Massachusetts, USA |
| October 1988 | • G06: Medical Applications of Moiré Fringe Topography
Participant Talk, College on Medical Physics, ICTP (the Abdus-Salam International Center for Theoretical Physics), Trieste, Italy |
| August 21, 1988 | • G05: Moiré Topography
Colloquium, Department of Physics, KU |
| April 25, 1987 | • G04: Moiré Topography in the Management of Spinal Deformities
Guest Lecture, AKU |
| December 25, 1986 | • G03: Expansion of the Universe
Presentation, Meeting of the Albert Einstein Society, Karachi |
| November 25, 1986 | • G02: The Making of a Physicist
The Karachi Physics Society Seminar, FG Urdu Science College, Karachi |
| November 17, 1986 | • G01: Moiré Topography
Presentation, Meeting of the Albert Einstein Society, Karachi |

Professional Development Short Courses

August 25-29, 2008
Course Details

May 7-11, 2007
Course Details

August 14-19, 2006
Course Details

August 22-26, 2005
Course Details

- 4 week-long courses conducted at IST and SUPARCO (Plant); attendees professional engineers and scientists working in SPD organizations; topics covered included computation of down-range and cross-range errors, two- and three-body problems in the plane polar and the elliptic-astrodynamical-coördinate meshes, explicit guidance schemes and control laws:
 - Mission Design for SLV (Satellite-Launch Vehicle)
<http://www.ngds-ku.org/Astrodynamics/IST3.pdf>
Department of Aeronautics and Astronautics, IST
 - Astrodynamics and Flight Dynamics
<http://www.ngds-ku.org/Astrodynamics/SUPARCO.pdf>
Training Division, SUPARCO (Plant)
Commission, Karachi,
 - Guidance, Navigation and Control of Spacecrafts
<http://www.ngds-ku.org/Astrodynamics/IST2.pdf>
Department of Aeronautics and Astronautics, IST
 - Astrodynamics for Space Technologists
<http://www.ngds-ku.org/Astrodynamics/IST1.pdf>
Department of Aeronautics and Astronautics, IST

Technical Trainings

At ENGRO Asahi Polymer
and Chemicals Limited

At University of Karachi

Teachers' Trainings

- Technical trainings were conducted in the mathematics and the methods of Space-flight dynamics, research methodology and techniques of anthropometry:
 - Communication and Presentation Skills
Facilitator of the Workshop, April 6, 2005; details:
<http://www.ngds-ku.org/Professional/Engro.pdf>
 - Workshop on Preparing Research Proposals
Coördinator, Office of Dean, Faculty of Science, April 16, 2008; details:
<http://www.ngds-ku.org/DFS/DFS01.pdf>; <http://www.ngds-ku.org/DFS/DFS01.htm>
 - Research Methodology
Instructor, Graduate Studies Course, Faculty of Arts, November 21-24, 2007
 - Professional Development Short Courses for Coöperative Teachers
Time Management, Goal Setting, Relationship Strategies[‡] January 3-28, 2005
 - Professional Trainings for MA, MSc, MIBM and PhD Students
Presentation Skills, Behavior-based-Interviewing Skills, 2004-2005
 - Organization and Re-engineering of Schools
Visiting Tutor, In-Service Training INSET 2010, Department of Professional Development, the City School Southern Region, PAF Chapter Campus, Karachi, October 15, 16, 2010
 - Improving the Quality of Mathematics Education in Pakistan
Master Trainer, Beacon Light Academy, 'O' Levels, Gulshan-é-Iqbal, Karachi
First Workshop: *Concept Building in Pre-University Mathematics Education*, August 12, 2009
Second Workshop: *Efficiently and Effectively Conducting Quizzes, Tests and Examinations in Mathematics*, August 19, 2009
Third Workshop: *Problem Solving in Mathematics*, August 26, 2009
Flyer: http://www.ngds-ku.org/ngds_folder/Wrkshps2009.pdf
 - Mathematics for College Teachers
Course Coördinator, Six-Day-In-Service-Training Course, HEC Regional Office, Karachi, August 16-21, 2004 — **highest rating** by participants for lectures delivered
 - Correction Strategies at the Intermediate Level
Resource Person for the Module, Commecs Educational Trust, Karachi, April 17, 2004
 - Solving Mathematics Word Problems
Subject Expert (Mathematics), FDP Intensive Workshop, Commecs Institute of Business and Emerging Sciences, Karachi, 1999
 - Problem Solving in Science
Master Trainer, Science Teachers' Training, the International School, Clifton, Karachi, 1997

[‡]based on analysis of management styles

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*Under the Umbrella of
the NGDS Pilot Project*

- Anthropometric Measurements of the Female Child
Trainer for the Master Trainers, *Tawana Pakistan* (a project of the Aga Khan Foundation), AKU, April 2003
(*Manual for Obtaining Anthropometric Measurements*[⊖] was produced as part of this training program)

- Anthropometric Measurements of the Special Child
Master Trainer, Department of Special Education, KU, November 2006
(Trained faculty and final-year students[⊖])

At SUPARCO (Plant)

- Basic Training Course (Mechanical) for Newly-Inducted Assistant Managers
Lectures in *Applied Mathematics and Space-Flight Dynamics*, September 11-20, 2002
- Orientation Program for Newly-Inducted Assistant Engineers and Scientific Officers
Lectures in *Mathematical Methods for Space-Flight Dynamics*, September 5-15, 1994

Youth Motivation

- Talent-Farming Scheme
Lecturer, the Summer School (for BSc and MSc students), HEC Regional Center, Karachi, July 12-20, 2004 (delivered 2 lectures)

Details

- The Early Talent Research Participation Program (ETRPP)
http://www.ngds-ku.org/ngds_folder/ETRPP.htm
A subproject of the NGDS Pilot Project
High-School Students introduced to ongoing research programs of KU
Program Convener, 2001-2010

Details

- The NGDS Student Internships
http://www.ngds-ku.org/ngds_URL/subprojects.htm#Internships
A subproject of the NGDS Pilot Project
Pre-University Students participate in the ongoing research programs of KU
Program Convener, 2003-2010

Web address of this document: <http://www.ngds-ku.org/cv/Univguest.pdf>

End of document

[⊖]full text available at: http://www.ngds-ku.org/ngds_folder/M02.pdf

[⊖]the section on developmentally delayed (special) children was added in the above manual for this training session

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