



PROFESSIONAL DEVELOPMENT SHORT COURSE

ON

MISSION DESIGN FOR SLV

Who should attend:

Engineers, Scientists and Students, who wish to expand their knowledge base on the design of 'Satellite Launch Vehicles (SLV)

Course Duration: 10 hrs (5 day, 2 hrs a day)

Course Schedule: 25 - 29 August, 2008

Lecture timings: 1500 hrs to 1700 hrs

Course Outline:

Day 1

- Projectile Dynamics, Orbital and Escape Velocities
Geostationary and Polar Satellites, SLV Orbits
- Techniques of Problem Formulation and Solution

Day 2

- Down-Range and Cross-Range Error for Short-Rang
Projectiles
- Mathematics of Inertial-Navigation and Telemetry Systems
- Review of Lagrangian and Hamiltonian Dynamics

Day 3

- Two-Body problem in Plane-Polar - Coördinate Mesh
- Two-Body problem in Elliptic- Astrodynamical -Coördinate
Mesh
- Hohmann-Transfer Orbit

Day 4

- Control Laws: Extended-Cross-Product, Dot-Product,
Ellipse-Orientation Steering
- Explicit-Guidance Schemes: Delta, Lambert Scheme, Q System
- Three-Body Problem and Stability of Satellites

Day 5

- Problem Discussion/Software Demonstration
- Course Summary

About the Instructor:

Professor Dr. Syed Arif Kamal

MS (Indiana, Bloomington, USA), MA (Johns Hopkins, USA), PhD (Karachi), Member AIAA (USA)
Ex-Chairman

Department of Mathematics

Interdepartmental Faculty

Departments of Computer Science, Physics and Chemistry

Institute of Space and Planetary Astrophysics

UNIVERSITY OF KARACHI

Convener

National Curriculum Revision Committee in Mathematics
Higher Education Commission

Former Senor Scientific Officer

Control Systems Laboratories, SUPARCO (Plant), Karachi,
Pakistan Space and Upper Atmosphere Research Commission



Course Fee

Rs. 5,000/- Per Participant
(Registration open till 25th August 2008 (1400 hrs)

Free Registration for Students

For queries:

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