

Institute of Space Technology (Islamabad)

ASTRODYNAMICS FOR SPACE TECHNOLOGISTS

Professional-Development-Short Course

August 22-26, 2005

Instructor

Professor Dr. Syed Arif Kamal

Member AIAA

Chairman *Convener*
Department of Mathematics National Curriculum Revision
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Introduction of the Participants, Instructor & Program

- Evaluation Form
- Learning-Evaluation Questionnaire

| Day | Date | # | Topic |
|------------|-----------------|----------|---|
| Monday | August 22, 2005 | 1 | Projectile Dynamics, Orbital and Escape Velocities |
| | | 2 | Down-Range and Cross-Range Error for Short-Range Projectiles |
| Tuesday | August 23, 2005 | 3 | Geostationary and Polar Satellites, Satellite-Launch Vehicle (SLV), Satellite and. SLV Orbits |
| | | 4 | Review of Lagrangian and Hamiltonian Dynamics |
| Wednesday | August 24, 2005 | 5 | Two-Body Problem in Plane-Polar-Coördinate Mesh |
| | | 6 | Two-Body Problem in Elliptic-Astrodynamical-Coördinate Mesh |
| Thursday | August 25, 2005 | 7 | Hohmann-Transfer Orbit |
| | | 8 | Three-Body Problem and Stability of Satellites |
| Friday | August 26, 2005 | 9 | Explicit-Guidance Schemes |
| | | 10 | Control Laws: Extended-Cross-Product Steering and Dot-Product Steering |