wavefront analytic engines for the shared world

Satellite Orbits 101

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Wavefront is committed to training and supporting their customers. Part of this commitment is offering a series of courses that promote foundational understanding. Satellite Orbits 101 will guide you through the basics of satellite orbits beginning with Chapter 6: Space Segment from The *ITU Handbook on Satellite Communications*. This handbook is the essential overview of satellite communications from the ITU, the organization that administers international radiocommunication standards. Satellite Orbits 101 also references *M & G: Satellite Orbits, Models, Methods, Applications* written by Montenbruck and Gill. Satellite Orbits 101 is available for your team's training as a web conference or as part of a training seminar at your location or ours. Wavefront can also customize a training seminar to meet your team's specific goals.

Satellite Orbits 101 Course Outline

Chapter 6 (ITU)	**Space Segment**	
	Section 6.1	Satellite Orbits
	Section 6.6	Launching, positioning and station-keeping
Chapter 2 (M&G)	**Introductory Astrodynamics**	
	Section 1	General Properties of the Two-Body Problem
	Section 2	Prediction of Unperturbed Satellite Orbits
	Section 4	Preliminary Orbit Determination
Chapter 3 (M&G)	**Force Model**	
	Sections 2 - 6	Geopotential, Sun and Moon, Solar Radiation Pressure, Atmospheric Drag, and Thrust Forces
Chapter 5 (M&G)	**Time and Reference Systems**	
	Section 1, 2, 5	Time, Reference Systems, and Datums
Chapter 8 (M&G)	**Orbit Determination and Parameter Estimation**	
	Section 1	Weighted Least Square Estimation

Note that the material drawn from Chapter 3 and 5 of M&G is descriptive, while material drawn from Chapters 2 and 8 of M&G will require some mathematics, though it will be kept as light as possible.

(ITU) *Handbook of Satellite Communications*, Third Edition, Wiley, International Telecommunication Union, 2002.
(M&G) *Satellite Orbits, Models, Methods, Applications*, Oliver Montenbruck and Eberhard Gill, Springer, 2001.

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