

ASEN6070 – Satellite Geodesy - Fall 2017
(crosslisted with EPP2 in GEOL/PHYS/ASTR 6620)

Instructor	Dr. R. Steven Nerem (Office: ECNT319, Ph. 492-6721, Email: nerem@colorado.edu)
Class Time	TTH 9:30 – 10:45 pm
Class Location	ECCS 1B14
Class Web Page	D2L
Office Hours	11-12 TTH (after class), or anytime door is open, or by email
Required Text (PDFs supplied)	by Tom Herring (editor), Elsevier, 2005 ISBN 978-0444534606
Optional Text	, 2000 by William M. Kaula, Dover Publishing Co. ISBN 0-486-41465-5
Required Text (PDF supplied)	by John Wahr
Grading	Take Home Mid-Term (25%) Take Home Final Exam (25%) Homework (25%) (10 pts deducted for each day late!) Research Project (25%) 90-100 = A, , 5ng

	solid Earth tides, and gravity field representations.
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Syllabus – ASEN6070 – Satellite Geodesy (reading assignments – Herring, Wahr)

I. Introduction to Geodesy (HCh1)

II. Introduction to Observational Techniques (HCh1, WCh2)

1. Ground-based gravity measurements (HCh2, HCh3)
2. Satellite Laser Ranging (SLR)
3. DORIS and PRARE
4. The Global Navigation Satellite System (GNSS)
5. Very Long Baseline Interferometry (VLBI)
6. Satellite-to-Satellite Tracking / GRACE
7. Accelerometer Measurements
8. Gravity Gradiometer Measurements (GOCE)
9. Satellite Altimetry (HCh5)
10. Interferometric SAR (WCh12)

III. Potential Theory (WCh3, HCh2)

1. MacCullagh's Formula
2. Laplace's Equation
2. Spherical Harmonic Representation
3. Point Mass / Density Layer
4. The Geoid
5. Current Knowledge of the Earth's Gravity Field

IV. Interpretation of Observed Gravity Anomalies

References

Anderson, A. J., and A. Cazenave, Eds.,
Academic Press, 1986.

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believe they have been subject to misconduct under either policy should contact the Office of Institutional Equity and Compliance (OIEC) at 303-492-2127. Information about the OIEC, the above referenced policies, and the campus resources available to assist individuals regarding sexual misconduct, discrimination, harassment or related retaliation can be found at:

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