

Graduate level courses taken at the University of Maryland

Semester	Course	Instructor	Text [†]
Autumn 02	Classical Mechanics and Control Theory I*	S. Antman	[2]
Autumn 02	Numerical Analysis I	R. Nochetto	[20]
Autumn 02	Partial Differential Equations I	G. Dolzmann	[11]
Spring 03	Classical Mechanics and Control Theory II*	P. Krishnaprasad	[16]
Spring 03	Numerical Analysis II	J. Osborn	[24]
Spring 03	Partial Differential Equations II	G. Dolzmann	[11]
Spring 03	Real Analysis I	R. Herb	[22]
Autumn 03	Differential Topology	H. King	[14]
Autumn 03	Ordinary Differential Equations I	S. Antman	[6], [19]
Autumn 03	Independent Study	S. Antman	[4]
Spring 04	Ordinary Differential Equations II	S. Antman	[6], [19]
Spring 04	Independent Study	S. Antman	[4]
Autumn 04	Geometric Measure Theory	M. Grillakis	[17]
Autumn 04	Introduction to Continuum Mechanics*	S. Antman	[4]
Autumn 04	Nonlinear PDEs	E. Tadmor	
Autumn 04	The Finite Element Method	R. Nochetto	[8], [5]
Autumn 04	Topology I*	H. King	[7]
Spring 05	Introduction to Nonlinear Continuum Physics	S. Antman	[3], [4]
Spring 05	Real Analysis II	M. Machedon	[15], [23]
Autumn 05	Calculus of Variations I*	G. Dolzmann	[9], [13], [18]
Autumn 05	Numerical Methods for PDEs*	E. Tadmor	[21]
Spring 06	Calculus of Variations II	G. Dolzmann	[1], [12], [18]
Autumn 06	Wavelet Theory	J. Benedetto	[10]

[†] See the following page for the list of references.

* Unofficial audit. All other courses were taken for credit.

Research Interaction Teams participated in at the University of Maryland

Semester	Title
Autumn 04-06	Applications of Partial Differential Equations
Spring 05	Iterative Methods for Incompressible Fluid Dynamics
Spring 06	Numerical Analysis of Eigenvalue Problems and Hydrodynamic Stability
Autumn 06	Wave Equations, Schroedinger Equations and Applications
Autumn 06	Numerical Analysis of the Boussinesq Equations

References

- [1] L. Ambrosio, N. Fusco, and D. Pallara. *Functions of Bounded Variation and Free Discontinuity Problems*. Oxford University Press, 2000.
- [2] S. S. Antman. *Unpublished lecture notes on classical mechanics*.
- [3] S. S. Antman. *Unpublished lecture notes on electromagnetism*.
- [4] S. S. Antman. *Nonlinear Problems of Elasticity*. Springer, second edition, 2005.
- [5] D. Braess. *Finite Elements*. Cambridge University Press, second edition, 2001.
- [6] F. Brauer and J. A. Nohel. *The Qualitative Theory of Ordinary Differential Equations: An Introduction*. Dover, 1989.
- [7] G. E. Bredon. *Topology and Geometry*. Springer-Verlag, 1997.
- [8] S. C. Brenner and L. Ridgway Scott. *The Mathematical Theory of Finite Element Methods*. Springer-Verlag, second edition, 2002.
- [9] B. Dacorogna. *Direct Methods in the Calculus of Variations*. Springer-Verlag, 1989.
- [10] I. Daubechies. *Ten Lectures on Wavelets*. Society for Industrial and Applied Mathematics (SIAM), 1992.
- [11] L. C. Evans. *Partial Differential Equations*. American Mathematical Society, 1998.
- [12] L. C. Evans and R. F. Gariepy. *Measure Theory and Fine Properties of Functions*. CRC Press, 1992.
- [13] M. Giaquinta and S. Hildebrandt. *Calculus of Variations. I*. Springer-Verlag, 1996.
- [14] M. W. Hirsch. *Differential Topology*. Springer-Verlag, 1994.
- [15] L. Hörmander. *The Analysis of Linear Partial Differential Operators. I*. Springer-Verlag, 2003.
- [16] J. E. Marsden and T. S. Ratiu. *Introduction to Mechanics and Symmetry*. Springer-Verlag, second edition, 1999.
- [17] P. Mattila. *Geometry of Sets and Measures in Euclidean Spaces*. Cambridge University Press, 1995.
- [18] S. Müller. *Variational Models for Microstructure and Phase Transitions*. Lecture Notes 2. Max Planck Institute, 1998.
- [19] L. Perko. *Differential Equations and Dynamical Systems*. Springer-Verlag, third edition, 2001.
- [20] A. Quarteroni, R. Sacco, and F. Saleri. *Numerical Mathematics*. Springer-Verlag, 2000.
- [21] R. D. Richtmyer and K. W. Morton. *Difference Methods for Initial-Value Problems*. Wiley, second edition, 1967.
- [22] H. L. Royden. *Real Analysis*. Macmillan, third edition, 1988.
- [23] W. Rudin. *Real and Complex Analysis*. McGraw-Hill, third edition, 1987.
- [24] J. Stoer and R. Bulirsch. *Introduction to Numerical Analysis*. Springer-Verlag, third edition, 2002.