18.155: DIFFERENTIAL ANALYSIS
SYLLABUS, FALL 2001

RICHARD MELROSE

As of September 5.

Texts

(1) Partial Differential Equations: Lawrence C. Evans[1]
(2) The Analysis of Linear Partial Differential Operators, Vol. 1: Lars Hörmander[2]

Lectures

September 6	Introduction.
September 11	Differentiability, Test functions, [2]§1.2.
September 13	[Distributions]
September 18	
September 20	
September 25	
September 27	[Lebesgue integration]
October 2	[Lebesgue integration]
October 4	
October 9	Columbus Day holiday.
October 11	[Fundamental solutions]
October 16	
October 18	
October 23	[Fourier transform]
October 25	
October 30	
November 1	
November 6	[Wave equation]
November 8	
November 13	
November 15	
November 20	[Laplace's equation]
November 22	Thanksgiving
November 27	
November 29	[Something interesting]
December 4	
December 6	
December 11	IN CLASS FINAL

Homework

I plan to hand out homework every Thursday on which there is a lecture, to be due the next lecture (usually the next Tuesday of course).

References

[1] Lawrence C. Evans, *Partial differential equations*, American Mathematical Society, Providence, RI, 1998. MR **99e:**35001

[2] L. Hörmander, *The analysis of linear partial differential operators*, vol. 1, Springer-Verlag, Berlin, Heidelberg, New York, Tokyo, 1983.

E-mail address: rbm@math.mit.edu