

18.737 Spring Semester, 2011

General Information

Class meetings: Tuesday and Thursday 9:30–11:00, in 2-131.

Text: T. Springer, *Linear Algebraic Groups*, Birkhäuser.

Lecturer: David Vogan, 2-243. Telephone: 253-4991. E-mail: dav@math.mit.edu. My office hours are Monday 3–4 and Tuesday 1–2, or by appointment; but you are welcome whenever my door is open.

Homework will be assigned from time to time in lecture. It will usually be due in class on the following Tuesday.

Plan is to cover in some detail Chapters 1–10 of Springer’s text, describing reductive groups over an algebraically closed field. The last few weeks will look at other topics, probably related to reductive groups over other fields.

(Tentative) Syllabus

Tues-Thurs 2/1–3	Definition, examples, Jordan decomposition
Tues-Thurs 2/8–10	Abelian groups, tori
Tues-Thurs 2/15–17	Lie algebras
Thurs-Tues-Thurs 2/24–3/3	Algebraic geometry, quotients
Tues-Thurs 3/8–10	Parabolic subgroups
Tues-Thurs 3/15–17	Root data
3/21–25	Spring Vacation
Tues-Thurs 3/29–31	Reductive groups
Tues-Thurs 4/5–7	Isomorphism theorem
Tues-Thurs 4/12–14	Existence theorem
Thurs 4/21	Algebraic geometry: general fields
Tues-Thurs 4/26–28	Reductive groups: general fields
Tues-Thurs 5/3–5	
Tues-Thurs 5/10–12	