

Final exam review

MAT 247

The final exam will cover all material presented in class up to and including symmetric bilinear forms. Study all theorems and definitions presented in class — you might be tested on the proof of any of them, though keep in mind that I probably won't give you any really long/difficult ones. Also, study all the homework/quiz/midterm problems.

Here are the topics we covered with an indication of references from books.

1. Minimal polynomial, generalized eigenvectors, Jordan form, characteristic polynomial (but we didn't cover rational canonical form or the elementary divisor theorem)
Axler chapter 8, Curtis chapter 7, Friedberg-Insel-Spence chapter 7.
2. Quotient spaces, dual spaces, tensor products, symmetric and exterior powers
Curtis chapter 8 (except for section 29), Purbhoo Notes on tensor products (on the website) .
3. Symmetric bilinear forms, quadratic forms, principal axis theorem
Friedberg-Insel-Spence section 6.8, Curtis section 31, Notes on symmetric bilinear forms (on the website).

You could do some exercises from these books as practice. I particularly recommend the exercises in Axler chapter 8, in Curtis chapter 8, and in Friedberg-Insel-Spence section 6.8.