**Math 120B Suggested Syllabus**

(Based on 29 lectures)

**Text:** *A first course in abstract algebra*, John Fraleigh, 7th Edition.

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| **Lecture**  | **Section**  | **Topic**  |
| 1 | 18 | Introduction to Rings and Fields  |
| 2 | 18 | Continued |
| 3 | 18 | Continued |
| 4 | 19 | Integral Domains  |
| 5 | 19 | Continued |
| 6 | 20 | Fermat’s and Euler’s Theorems  |
| 7 | 20 | Continued  |
| 8 | 22 | Rings of Polynomials  |
| 9 | 22 | Continued |
| 10 | 22 | Continued |
| 11 | 23 | Factoring Polynomials over a Field  |
| 12 | 23 | Continued |
| 13 | 26 | Homomorphisms and Factor Rings  |
| 14 | 26 | Continued |
| 15 | 26 | Continued |
| 16 |  | Review |
| 17 |  | **Midterm** |
| 18 | 27 | Prime and Maximal Ideals  |
| 19 | 27 | Continued |
| 20 | 27 | Continued |
| 21 | 29 | Field Extensions  |
| 22 | 29 | Continued |
| 23 | 29 | Continued |
| 24 | 30 | Vector Spaces  |
| 25 | 31 | Algebraic Extensions  |
| 26 | 31 | Continued |
| 27 | 31 | Continued |
| 28 | 45 | Unique Factorization Domains/Finite Fields  |
| 29 |   | Review  |