Mathematics 30810– Honors Algebra III

PCTR 116, MWF 11:30–12:20

Instructor Sam Evens
Office, Phone, Email 222 HH, 631–7165, sevens@nd.edu
Office Hours Monday 12:35–1:30
Wednesday 5:10–6:00
Or by appointment

Course Description
This course will cover groups and rings. In Artin, Algebra, 2nd edition, we will cover chapter 2, sections 6.7 to 6.11 in chapter 6, sections 7.1 to 7.7 in chapter 7, chapter 11, and chapter 12, time permitting. There is a continuation of this course into second semester, called Math 30820, where we will cover topics from chapter 14 through chapter 16.

Text
The main text for the course is Artin, Algebra, 2nd edition, which we will use also for Math 30820. Some other books you may want to look at are Herstein, Topics in Algebra or Abstract Algebra, Prentice-Hall, 3rd edition, and Fraleigh, A First Course in Abstract Algebra, published by Addison-Wesley. My feeling is that Artin’s book presents the material in the most interesting and elegant way, but may be more difficult for some of you to read, so it may be a good idea to read Herstein and/or Fraleigh. I’ll put Herstein and Fraleigh on reserve in the library if feasible.

Outside topic
5% of your grade will be based on some work on math outside of class. If you participate in an undergraduate/graduate reading group, you can write a report (one page or more) on what you learned from the reading group. You can attend one lecture from the undergraduate lectures in mathematics series described on the website: “http://math.nd.edu/undergraduate-program/math-for-everyone-series/”, and write a report of one page or more about the lecture you attended. Alternatively, you can read a section of any math book (including Artin) not covered in one of your courses, and write a report of one page or more about what you learned.

Hour Exams
There will be two hour exams during the semester. They are tentatively scheduled for Monday, Sept. 29, and Friday, November 7.

Final Exam
The Final Exam is scheduled for Thursday, December 18, 4:15–6:15 room TBA. I may allow a final project in place of the final exam.

Homework
There will be regular homework assigned. I plan on requiring that each student complete around eight problems each week, and will likely assign around ten problems, and let you choose which problems to do. You are encouraged to work with other students on problems, and to ask me questions about problems, but you should write up the solutions yourself. Some problems will be mostly computational, and other problems will require proofs. Exams will be a mixture of computations and proofs. Take-home written work is due on Wednesdays and will be announced in-class and on the course website at: www.nd.edu/~sevens/30810.html
Grading

The final grade will be determined based on instructor’s discretion and a weighted average of the grades on the homework, quizzes, hour exams, and final exam as follows:

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<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Hour Exams</td>
<td>15% each</td>
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<tr>
<td>Final Exam</td>
<td>30%</td>
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<tr>
<td>Outside Project</td>
<td>5%</td>
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<tr>
<td>Homework</td>
<td>35%</td>
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