Instructor: Christopher Ramsussen
  Email: crasmussen@wes...
  Phone: ×2315
Lectures: TTh 2:40 – 4:00 p.m., ESC 113
Office Hours: Wednesday and Thursday 10-11, and by appointment


Goals. The course will be a rigorous introduction to the theory of commutative rings and fields. We will also explore Galois theory near the end of the course. The course will also emphasize the independent study and communication of mathematical ideas directly from the students, with guidance from the instructor.

Office Hours. I am available Wednesday and Thursday mornings, 10:00 – 11:00, to answer questions about the course. I am also available by appointment, and you should feel free to contact me to set up an appointment at any time.

Course Rules. As we discussed on the first day, do not use resources that have not been cleared with me first. I do not want you discussing the material from students outside the course, or researching how to do the problems on-line, in other textbooks, etc. You are free to discuss the problems with one another and with me, and you may always refer to the textbook or any notes from class. Before using any other resources, please check with me first.

Details regarding missed classes, missed homework, extenuating circumstances, etc. will be negotiated on a case-by-case basis directly between the student and the instructor.

Grading

*Think deeply about simple things.*

– Philosophy of the Ross Mathematics Program

There are four components to your grade: informal homework, formal homework, participation, and the final exam. The first three components will center on problem sets that I will circulate on a regular basis during the semester.

Informal Homework. I will regularly collect from you informal homework, where you turn in written solutions to a subset of the problems on the problem sets. I expect you to attempt a reasonable number of problems, including some problems requiring proof. To begin, I expect you to attempt 5 problems each assignment, including 2 proofs. I reserve the right to change these numbers as the course progresses.
Here, attempt means: give a solution, or explain a partial solution, together with an explanation of what the ‘missing ingredients’ are. You can also present a failed approach, together with an explanation of why it failed. In all cases, acceptable work should reflect that you thought seriously about the problem and experimented with different approaches, even if you don’t come up with a solution. Simply stating definitions, or guessing which theorems might apply, is unlikely to be sufficient.

Students should write up their informal homework sets in blue or black ink (or type them up, preferably in LaTeX), and bring them to class each day. During class, students will present solutions – you are encouraged to correct and annotate your solutions during the class. I will collect the informal homework at the end of class, and grade it for completion by the following standards:

- **Check Plus**: Both the required number of problems, and the required number of proofs, are attempted. Every problem shows a serious attempt. The logic of every solution is easy to follow, even if incomplete. When solutions are incomplete, the student identifies this, and explains what they don’t understand, what tools are needed or missing, or what strategies they might use to pursue the problem further. (Notice that the serious attempt must be clear prior to the start of class, but the identification of errors and gaps may come from your in-class annotations).

- **Check**: the required number of problems are attempted seriously, including at least one proof. Usually the student identifies the gaps in the presentation, but perhaps not always.

- **Check Minus**: the student does not make a serious attempt at the required number of problems.

Your grade on all informal homework will be a score between 0 and 20. The following table gives the standard to earn various minimum grades:

<table>
<thead>
<tr>
<th>Informal Homework Score</th>
<th>Guaranteed if . . .</th>
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</thead>
<tbody>
<tr>
<td>19</td>
<td>at least 8 $\checkmark$ + and at most 1 $\checkmark$ −.</td>
</tr>
<tr>
<td>17</td>
<td>at least 6 $\checkmark$ + and at most 2 $\checkmark$ −.</td>
</tr>
<tr>
<td>15</td>
<td>at most 2 $\checkmark$ −.</td>
</tr>
</tbody>
</table>

**Formal Homework.** Informal homework assignments will be graded very quickly and be available for pickup in one of the bins outside my office. Each week, you should write up two proofs from the pool of problems given for informal homework. You are welcome, but not required, to use the same problem for both informal and formal homework.
Formal homework will be graded for correctness, completeness, and clarity. Although students may work together on solving problems, the write-ups for formal homework should be independent efforts by each student. Each formal assignment will be graded out of 20 points. The average over all formal assignments will earn you a score out of 20 points.

**Participation.** The success of this course depends on active student participation. It is necessary, but not sufficient, to attend all class meetings. Students must also share the responsibility of presenting solutions, or at least reporting their progress or leading discussions, on various problems. Students are expected to present their fair share of solutions, and participate in class discussions. There is no penalty for declining to present a solution to a given problem occasionally, but a pattern of avoiding presentations may lead to a lower grade.

Your participation score will be out of 20 points. Failing to attend class without explanation will adversely impact your score. If I expect to assign you a grade below 17 for reasons other than attendance, I will contact you so we may discuss participation in further detail.

**Final Exam.** The final exam will be held at the registrar-scheduled time, and will be graded out of 20 points.

**Course Grade.** The higher of your informal homework and your formal homework score will count twice towards your grade. Thus, there are 100 points available, as follows:

<table>
<thead>
<tr>
<th>Category</th>
<th>Best Possible</th>
</tr>
</thead>
<tbody>
<tr>
<td>Informal Homework</td>
<td>20</td>
</tr>
<tr>
<td>Formal Homework</td>
<td>20</td>
</tr>
<tr>
<td>Participation</td>
<td>20</td>
</tr>
<tr>
<td>Higher Homework Score</td>
<td>20</td>
</tr>
<tr>
<td>Final Exam</td>
<td>20</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

A raw score of 90 is guaranteed a letter grade of A−. A raw score of 80 is guaranteed a letter grade of B−.

**Disability Services**

It is the university policy to provide reasonable accommodations to students with documented disabilities. As your instructor, I am eager to support you in this regard. Please note that you should make requests known to me in a timely manner. If you require accommodations in this class, please speak with me during the first two weeks
of the semester, so that appropriate arrangements can be made. The procedures for registering with Disability Services can be found at http://www.wesleyan.edu/deans/disability-students.html.