

## Course Information

**Instructor:** Bruce Ikenaga

**Office:** Wickersham 105B

**Phone:** 871-7312 (Math Department Office: 871-7668). You can leave a message on my voice mail if I'm not in, **but email is strongly recommended.**

**Note:** I don't take phone calls at any of my home numbers, and I may not notice any voice mail you leave there. If you need to call, use my office number above.

**Email:** [Bruce.Ikenaga@millersville.edu](mailto:Bruce.Ikenaga@millersville.edu).

**Note:** Mail sent to me at any account besides my school account does not count as official notification, and I may not check other accounts regularly. If you need to mail, use my email above.

**Web page:** <http://sites.millersville.edu/bikenaga/courses/345-s18/345-s18.html>.

I'll post homework assignments and solutions, review sheets, links to course notes, and announcements here. **It is not on Desire2Learn!**

### Office hours:

- Monday: 11 a.m. – noon, 2 – 2:30 p.m.
- Tuesday: 2 – 2:30 p.m.
- Wednesday: [None]
- Thursday: 2 – 3:30 p.m.
- Friday: 9:30 - 10 a.m., 11 a.m. – noon

When you come in to ask questions, I will start by asking you to show me what you've done. "I couldn't get started" is not an acceptable response — don't come in empty-handed! I will not repeat class lectures, nor will I work problems that you haven't tried yourself.

If you want to see me but can't make those times, let me know and we'll try to set up an appointment.

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**Text:** My lecture notes are available online, and homework problems will be posted on the course web page. If you want a book to refer to (which, however, I won't be using or following), consider *Abstract Algebra* by Thomas Judson. It is free (<http://abstract.ups.edu>).

You may find a graphing calculator useful. The department supports the TI 83, 84, and 86 graphing calculators. If you use an unsupported calculator, I will probably be unable to help you use it.

- You cannot share a calculator with someone during an exam.
  - You may not use a calculator with symbolic algebra capabilities (such as the TI-89 or TI-92) during an exam.
  - You may not use any other electronic devices (e.g. phones, computers, or music players) during tests.
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**Description:** **Math 345** is 3-credit introduction to abstract algebra. It is a required course for math majors. You need a C- in Math 345 in order to be admitted to APS (Junior Block).

**Math 504** is the graduate version of this course. It meets concurrently with Math 345. Math 504 students will have additional work to do, described below.

The prerequisite is a C- or better in Math 310 (Math Proof) and in Math 322 (Linear Algebra). *These prerequisites will not be waived.* If you do not meet the prerequisite, you will be dropped without warning, and possibly after it's too late to add another course — so in this case, you should drop the course and register for Math 310 or Math 322 as appropriate.

You can only attempt a course 3 times. (If you enrolled and received a letter grade **or a W**, that counts as one attempt.) If you're attempting this course for the fourth time, you will be dropped without warning unless you receive permission for another attempt from the chair.

This section meets Monday, Wednesday, and Friday, 10–10:50 a.m. in Wickersham 112.

In this course, you will:

- Learn basic results about groups and rings.
- Become acquainted with important classes of groups and rings, such as cyclic groups, permutations groups, integral domains, fields, and polynomial rings.
- Learn about the functions associated to groups and rings (group and ring homomorphisms).
- Gain experience in writing proofs in the context of abstract algebra.

**Graded work:** The following work counts directly toward your grade:

What	When	How much
Test 1	Friday, February 16	100 points
Test 2	Friday, March 30	100 points
Test 3	Friday, April 27	100 points
Final	Friday, May 11, 8–10 a.m.	150 points
In-class work	Most classes	≈ 80–100 points (total)
Homework	Most classes	≈ 80–100 points (total)

- The point totals for the homeworks and class works are only approximate; they could change **significantly** depending on things like snow days.
- Students registered for Math 504 will be required to do all of the work required of Math 345 students, together with additional work (for example, additional homework assignments). Work for Math 504 will be labelled appropriately on the homework sheets. (Math 345 people may *not* do these for extra credit — sorry!) Since the point totals for the two courses will be different, the grades for the two courses will be computed independently (but according to the same percentage scale).
- If you get to class after an exam has started, you'll still be required to hand in your exam at the same time as everyone else. Don't be late!
- **Class Work** consists of problems I'll hand out in class. You'll be allowed to use your book and your notes, and you'll be allowed to talk with other people and ask me questions.
- *If you work on a class work for the entire class without finishing, then you may come in during office hours within one week to complete the work. You may not do class work during office hours in place of attending class.* You may not take a class work home; if you don't finish, you must hand it in.
- The Final Exam is cumulative. Everyone must take the final. You may not take a makeup for the final in order to leave early for vacation.

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### Makeups and Excuses:

- If you want a makeup for a test or an in-class work (which means taking it at any time other than the scheduled time, **earlier or later**, you should provide **evidence** of circumstances beyond your control wherever possible.
- If you miss a deadline, an in-class work, or a test, **you must contact me no later than 24 hours after the deadline, or the time the in-class work or test was given** — any later and you won't be excused. You are not excused until I approve your excuse.
- If I feel you're asking for an excessive number of excuses or makeups, I may penalize you or deny your requests. The longer you take to make up an exam, the more difficult the makeup exam will be.
- You are allowed **two free makeups**, which you may use to either make up a class work which you have missed, or to turn in a problem set *up to one class late*. (Problem sets turned in later than that will not be graded or recorded in any way.) You may *not* use these free makeups on exams. Class Work makeups must be completed no later than 2 p.m. on Friday, May 4.
- You do not need to use a free makeup if you have a valid excuse, as described above.

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### Attendance:

- You're expected to attend every class. While some class works and the tests are scheduled on the syllabus, *I may give graded work during any class without prior notice*.
- If you miss a *large* number of classes, I may ask the academic authorities to contact you and check that everything's okay.

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### Homework:

- The deadlines for the homework assignments will be listed on the assignment sheets that are handed out in class. Deadlines are always *the end of class* (not 5 minutes past the end of class!). Forgetting to bring your homework to class or forgetting to turn it in is not an excuse. Homework turned in past a deadline will not be graded, checked, or recorded in any way (unless you use your free makeup, or you have an excuse).
- You may work with other people on homework and class work, but you must write up your solutions in your own words. In particular, verbatim copying is not permitted. (For example, it is not fair to help someone by simply handing them your assignment.) Appropriate help is explaining something to someone verbally.
- If you worked with someone else, you should write something like "I worked with X, Y, and Z" on your paper; it's a matter of honesty, and it won't affect the amount of credit you receive.
- You must justify *all* nontrivial statements, even if the question is a "Yes-or-No" or "True-or-False" question. *Correct answers without justification receive no credit*. If you aren't sure if you've said enough, ask me.

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**Grades:** I'll compute your grade by adding up the scores for your tests, the final, homework, and in-class work. I'll compute your percentage to the nearest tenth of a percentage point, and assign grades based on

the following scale (with  $x$  representing your percentage):

Range	Grade	Range	Grade
$x \geq 93.0$	A	$73.0 \leq x < 77.0$	C
$90.0 \leq x < 93.0$	A-	$70.0 \leq x < 73.0$	C-
$87.0 \leq x < 90.0$	B+	$67.0 \leq x < 70.0$	D+
$83.0 \leq x < 87.0$	B	$63.0 \leq x < 67.0$	D
$80.0 \leq x < 83.0$	B-	$60.0 \leq x < 63.0$	D-
$77.0 \leq x < 80.0$	C+	$x < 60.0$	F

(For students in Math 504, the grade ranges will be as above, except that the range for C- will be  $65.0 \leq x < 73.0$ , the range for F will be  $x < 65.0$ , and there will be no D-range [because there are no D-grades for graduate students].)

Then if *all* of the following four conditions are met, I will raise your grade to the next higher grade level (e.g. from C+ to B-):

1. You're within a percentage point of the next higher grade. (For example, if your percentage  $x$  satisfies  $72.0 \leq x < 73.0$ , you are within one percentage point of a C. In this case, 71.9% would *not* be close enough.)
2. You skipped no more than one class without an excuse.
3. You received some credit for *all* of the homeworks and class works.
4. Of the three tests and the final, at least two are at the higher grade level (as determined by the percentage scale above).

These conditions must be met *exactly*. If any one of these conditions is *not* met, then your grade will *not* be raised.

Some other notes about grades:

- If you cheat on a homework, or a class work, or a test, you may get a zero for the homework, class work, or test. I report incidents of cheating to the academic authorities.
- Grades are based *only* on your performance in the course — *not* on (for instance) the need to graduate on time, stay in school or in a major, play sports, maintain a scholarship, or transfer credit.
- I don't drop or discount your lowest test score. Nor does a good final exam grade wipe out poor performance in other areas.
- To be fair, I can't extend privileges to one person that I do not extend publicly to everyone. So I won't let you do extra credit work or redo an exam to improve your grade.
- You cannot get an Incomplete in order to avoid a poor grade.

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Millersville University and its faculty are committed to assuring a safe and productive educational environment for all students. In order to meet this commitment, comply with Title IX of the Education Amendments of 1972, 20 U.S.C. Sec. 1681, et seq., and act in accordance with guidance from the Office for Civil Rights, the University requires faculty members to report to the University's Title IX Coordinator incidents of sexual violence shared by students. The only exceptions to the faculty members reporting obligation are when incidents of sexual violence are communicated by a student during a classroom discussion, in a writing assignment for a class, or as part of a University-approved research project. Faculty members are obligated to report to the person designated in the University Protection of Minors policy incidents of

sexual violence or any other abuse of a student who was, or is, a child (a person under 18 years of age) when the abuse allegedly occurred.

Information regarding the reporting of sexual violence, and the resources that are available to victims of sexual violence, is available at <http://www.millersville.edu/socialseq/title-ix-sexual-misconduct/index.php>.

**Comments, complaints:** If you have comments or complaints about anything connected with the course, please let me know!