

Indiana State University
MATH 512_301 Abstract Algebra
Full Semester Summer 2022: May 16, 2022 - Jul 29, 2022
Format: Online Asynchronous

Instructor

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Distance Office Hours: TBD. At the beginning of the course, I will be taking a poll to see what hours work best for you. I am also willing to meet with you on your schedule. To make an appointment please email a couple of reasonable times that fit with your schedule and we will set one up. Yuja and Zoom allow us to speak in real time. You can share your written work, receive feedback, video chat, etc. We can make individual or group appointments. Please make sure you read the information about the Yuja and Zoom tools and can log in through the Canvas site. If you encounter any difficulties, contact either the Canvas support staff or me.

Course Introduction

Catalog Description: This course is an introduction to groups, rings, and fields, including polynomial rings, divisibility, and unique factorization domains.

This course will spend a substantial amount of time understanding the algebraic structures of various sets and building upon previously learned methods of proof.

Please note this is a graduate summer, accelerated course so we will go through material fairly quickly, if you need help please ask!

Textbooks

Required for Course: *Abstract Algebra*, by David S. Dummit and Richard M. Foote.
ISBN Number: 978-0-471-43334-7

You can order your book from the [Indiana State University Barnes and Noble bookstore](#). This text has been around a long time, if you want to look at other avenues for purchase, you will probably be able to find a used edition. Again, any edition of this text is acceptable.

The textbook will be a valuable resource for you outside of the classroom. It is designed to supplement the lectures and activities done in the classroom. Readings, homework, and supplemental questions may be assigned out of the textbook.

Technology Requirements

For this online course, you will need access to a reliable computer with high-speed internet access. To access the course, please log into Canvas (you can find a link at the top of the ISU home page) using your Sycamore ID and password. Do not access Canvas through the MyISU Portal; if you do, your access may get timed out, and you will likely lose some of your work! You are expected to log in to Canvas at least once a day, and you must check your Sycamore email daily in order to keep up with class updates.

Your computer should meet the following MINIMUM requirements:

- 2.0 GHz Processor or higher
- 4 GB Memory
- 120 GB Hard Drive or higher
- Wireless Connectivity (802.11 b/g minimum)
- Updated Windows or Mac Operating System
 - Windows
 - Windows XP SP2 or higher
 - Update: Start > All Programs > Windows Update
 - Mac
 - Update: Apple > Software Update

You must also have access to the following software and hardware:

- Antivirus Software (free download at <http://downloads.indstate.edu>)
- Firefox (free download at <http://www.mozilla.org/en-US/firefox/new/>) – Canvas generally prefers this browser.
- Internet Explorer (free download at <http://windows.microsoft.com/IE>) – This is a backup browser for Canvas. If you cannot access something in Firefox, try IE (or another browser) before contacting your professor or Indiana State’s OIT Help Desk.
- Java (free download at <http://www.java.com/getjava>)
- Adobe Flash Player (free download at <http://get.adobe.com/flashplayer/>)
- Microsoft Office (free download at <http://downloads.indstate.edu>)
- Noise-cancelling headphones/microphone (external, not one built into your computer)

Course Policies

1. My goal is for you to excel in this class and to develop the skills necessary to succeed in your chosen career. However, **you have the major responsibility for doing well**. Achievement of course standards requires *you* to know what you need to do to improve your performance. You are expected to carefully read assignments and the feedback returned to you, to note evaluation comments made to the entire class regarding assignments returned. *You cannot meet the objectives of this course by being a passive learner*. As the semester progresses, you should be able to implement several ideas to improve your performance. Also, you are expected to ask questions and/or schedule individual appointments to clarify evaluations or other aspects of the course not clear to you.

2. **Time-management** is crucial in online courses. As a distance class, this course is as rigorous and demanding as a face-to-face class. During a regular 16 week semester course, [per Indiana State Distance Education Guidelines](#), you should be willing and able to commit 9 to 15 hours per week. *Since this course is accelerated and shorter than a regular 16 week course, you should expect to put in more hours than this.*
3. Turn in all work on time. Last minute technology failures are not a reasonable excuse. If you wait until the last minute to do your homework and your internet connection or technology goes down, you will not get an extension on the homework. **Plan ahead!!!** Late work on assignments and exams will not be accepted unless you are experiencing an extraordinary circumstance that you communicate to me ASAP.
4. **Be courteous and respectful** to your classmates and to me. Please refer to the [ISU Code of Student Conduct](#).
 - a. Maintain a formal, respectful, civil, professional tone with *all* course communications, including but not limited to blog posts, discussion boards, and emails. Avoid derogatory language, obscenity, and hate speech.
 - b. Avoid the use of CAPS, as this indicates shouting.

Conferences and Individual Help

I will be available via appointment, distance office hours, and we will be able to make use of **Yuja and/or Zoom** during our synchronous meeting time and/or during appointments. During this time I can assist with assignment-specific questions in addition to general questions regarding the course. **Please do not hesitate to contact me for an appointment**, I would love to “see” you and help you on your homework!

Communication Policy

Please understand that I am not on-call 24/7. You can expect responses to your inquiries based on the following guidelines:

- You should **check your ISU email at least once daily** to stay current and avoid missing any important announcements or other correspondence. Missing important communications may jeopardize your success in the course.
- Before emailing me a question or calling, please **consult the Syllabus, Canvas site, textbook, and other available resources**. You will find many answers among the sources provided.
- Emails to me will be **answered within 48 business hours**; do not expect me to respond to your emails during the weekend or on holidays. Please be patient. I *will* respond to your inquiries.
- Emails must be sent **using your ISU email account** (associated with Canvas). Emails that are sent using non-ISU accounts are automatically funneled by the email program into the junk folder, which I rarely check.

- **Emails must contain at least the following information:** Math 512 and the subject of your message in the subject line of the email (e.g. Question about Homework Assignment). Emails that do not contain the above identifying information may be deemed spam/junk and may be inadvertently deleted.
- The *easiest* and most *efficient* way to get ahold of me is email; however, if you choose to call, **voicemails** to my office phone will be returned within two business days.

Technology Help

As a member of this learning community, you are expected to have basic computer skills, take responsibility for using appropriate hardware and software, and have a general understanding of how to use Canvas, plug-ins, etc. Technical problems will not serve as a valid excuse for a missed or late assignment.

Please inform me as soon as you know there is an issue. I may be able to assist you, otherwise, the Office of Information Technology (OIT) offers many resources to assist with your technology needs. First, you can use a self-help tool available through the [MyISU Portal](#) as well as on the [OIT website](#). Here you have direct access to the OIT [Knowledge Base](#) with up-to-date information about common errors, problems, and issues within Canvas and other supported technologies. Think of this as an FAQ resource. Simply log into the MyISU Portal and click on the **Help Desk Self-Service** badge available in the Workspace tab to browse the categories.

You can also submit a help desk ticket through the [OIT website](#) or via the [Submit a Ticket](#) link within the **Help Desk Self-Service** in the Workspace tab in the [MyISU Portal](#). By defining in detail your problem with the drop-down selections available, your ticket will be routed directly to the group or individual who can best assist you. As you are typing your ticket, Knowledge Base articles may be presented to you that may help you resolve your issue without having to create a ticket in the first place.

If you are wondering about the status of a ticket that you currently have open with OIT, you can click on the **My Tickets** link within the **Help Desk Self-Service** in the Workspace tab in the [MyISU Portal](#) to view your history. You can use this mechanism to track progress or to add information to the ticket yourself.

If you have a specific Canvas concern, please contact **Instructional Tools**:

Phone: 812-237-7000

Email: isu-support@mail.indstate.edu

Or contact the **OIT Help Desk** directly for general technology help:

Phone: 812-237-2910 or 888-818-5465

Email: IT-Help@indstate.edu

Grades

The following is an *approximate* grading scale used for final course grades. *The Instructor reserves the right to exercise professional judgment in determining final grades.*

A	93-100%	C	73-76%
A-	90-92%	C-	70-72%
B+	87-89%	D+	67-69%
B	83-86%	D	63-66%
B-	80-82%	D-	60-62%
C+	77-79%	F	59% or below

The Instructor reserves the right to exercise professional judgment in determining final grades.

The work you do this semester will be weighted as follows:

Homework	50%
Midterm Exam	20%
Final Exam	30%

Changes to the grading policy are at my discretion and will be announced on Canvas.

Each of the above grade categories are defined below:

Homework

Homework will be given out periodically, approximately once a week, and you must turn it in for a grade. *Work should be neat, complete and well organized.* Please put your name on the top of each paper handed in (even when submitting it virtually). Please read and follow the directions in Canvas carefully.

Midterm Exam

Exams may be timed and/or proctored (by me or another university proctor) or of a take home style exam. The midterm exam will be scheduled approximately $\frac{1}{2}$ of the way through the summer semester. The exact date and details will be posted on Canvas. Except for emergencies, you must contact me by the day of the test if you are not able to take the test. In general, make-ups need to be taken within one week of the in-class test. Exceptions to this can be made in extraordinary cases, but it is your responsibility to contact me about this in a timely manner.

Final Exam

The final exam for this course will be comprehensive and will follow the final exam schedule as provided by the registrar. The final exam may be a combination of proctored and/or timed questions and take home style questions. The final exam will be comprehensive. More information will be posted as the semester continues.

Academic Honesty

It is imperative that you adhere to standard practices of academic honesty and integrity in this course. I encourage you to review the University's Academic Dishonesty Policy found in the Student Code of Conduct (see <http://www.indstate.edu/sjp/docs/code.pdf>). If I find that you have violated any part of the Academic Dishonesty Policy, at minimum, you will receive an F on the assignment, and possibly in the course.

Academic dishonesty is not tolerated at Indiana State. The penalties can be severe and include: failing the assignment, failing the course, and referral to Student Judicial Programs to face form conduct charges. Students found in violation may be suspended or expelled and can have a permanent notation affixed to the official transcript indicating that an academic integrity violation occurred.

Academic Freedom

Indiana State follows the American Association of University Professors' guidelines for academic freedom as described on their website (<http://www.aaup.org/aaup/pubres/policydocs/content/1940statement>):

Teachers are entitled to freedom in the classroom in discussing their subject, but they should be careful not to introduce into their teaching controversial matter which has no relation to their subject.

Accessibility

Indiana State University seeks to provide effective services and accommodation for qualified individuals with documented disabilities. The technology tools utilized within this course offer a variety of accessibility features, such as compatibility with screen readers, text-based visual alternatives, video scripts, and attention to Universal Design. The central platform for this course, [Canvas, also complies with ADA requirements](#). If you need additional accommodations because of a documented disability, you are required to register with Disability Support Services at the beginning of the semester. Contact the Director of Student Support Services at 812-237-2301. Once registered, the Director and course instructor will ensure that you receive all the additional help that Indiana State University offers.

Americans with Disabilities Act Statement

Indiana State University recognizes that students with disabilities may have special needs that must be met to give them equal access to college programs and facilities. If you need course adaptations or accommodations because of a disability, please contact us as soon as possible in a confidential setting either after class or in my office. All conversations regarding your disability will be kept in strict

confidence. Indiana State University's Student Support Services (SSS) office coordinates services for students with disabilities: documentation of a disability needs to be on file in that office before any accommodations can be provided. Student Support Services is located on the lower level of Normal Hall in the Center for Student Success and can be contacted at 812-237-2700, or you can visit the ISU website under A-Z, Disability Student Services and submit a Contact Form. Appointments to discuss accommodations with SSS staff members are encouraged.

Once a faculty member is notified by Student Support Services that a student is qualified to receive academic accommodations, a faculty member is obligated to provide or allow a reasonable classroom accommodation under ADA.

Faculty should contact Rita Worrall at 237-2301 or Debbie Huckabee at 237-7920 for questions about or assistance with accommodations for students with disabilities.

Emergency Services

Unfortunately a catastrophic event could occur on a local, regional, or national level that disables communication to or from Indiana State University. Students should provide for their own safety and the safety of their family and then contact their instructors by phone, private e-mail, or through alternately provided numbers. Every effort on the faculty's part will be made to reasonably attempt to continue with the course and to meet the course objectives. If, for any reason, there is no internet or telephone communication available for an extended period of time, postal service will be used to continue; and in this instance students will be awarded incomplete grades until revised completion plans can be determined. The [Department of Public Safety](#) website can be accessed for the emergency response plan and other documents concerning student and faculty safety.

Student Disclosures of Sexual Misconduct

Indiana State University fosters a campus free of sexual misconduct including sexual harassment, sexual violence, intimate partner violence, and stalking and/or any form of sex or gender discrimination. If you disclose a potential violation of the sexual misconduct policy I will need to notify the Title IX Coordinator. Students who have experienced sexual misconduct are encouraged to contact confidential resources listed below. To make a report to the Title IX Coordinator, visit the Equal Opportunity and Title IX website: <http://www.indstate.edu/equalopportunity-titleix/titleix>.

Confidential Resources: The ISU Student Counseling Center – HMSU 7th Floor; 812-237-3939;^{[[SEP]]}
www.indstate.edu/cns

The ISU Victim Advocate – Leah Reynolds; HMSU Room 813; 812-237-3829(office); 812-243-7272;
leah.reynolds@indstate.edu

Campus Ministries - <http://www2.indstate.edu/sao/campusinistries.htm>;^{[[SEP]]}

For more information on your rights and available resources:^{[[SEP]]} <http://www.indstate.edu/equalopportunity-titleix/titleix>

The Instructor reserves the right to exercise professional judgment in determining final grades.

Tentative Course Schedule:

Week 1	Preliminaries (Chapter 0) Introduction to Groups (Sections 1.1)	Week 1 HW Assignment
Week 2	Types of Groups (1.2 - 1.5)	Week 2 Assignments
Week 3	Group Homomorphisms and Group Actions (1.6 - 1.7)	Week 3 Assignments
Week 4	Subgroups (Chapter 2)	Week 4 Assignments
Week 5	<u>Midterm Exam</u>	<u>Midterm Exam</u>
Week 6	Quotient Groups (3.1 - 3.2)	Week 6 Assignments Due 6/29/21
Week 7	Isomorphism Theorems (3.3 - 3.5)	Week 7 Assignments
Week 8	Group Actions (Chapter 4)	Week 8 Assignments
Week 9	Direct products (Sections 5.1 - 5.3)	Week 9 Assignments Due 7/20/21
Week 10	Intro to Rings (7.1 - 7.2) (You will be responsible for this material on final exam)	<u>NO HW</u>, Study for Final Exam
Week 11	<u>Final Exam Week</u>	<u>Final Exam</u> <u>Due</u>