Syllabus for Math 430, *Abstract Algebra*, Fall 2018

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Office Hours: MWF 11:00am-12:00 noon and by appointment.

COURSE DESCRIPTION: An introduction to groups, rings and fields. This is a proof based course. Pre-requisite Math 245 and Math 238 or Math 300.

COURSE GOAL: Develop the theory of abstract algebra using concrete and known topics. We will cover most of the sections in Chapters 1-5 of the text.

TEXT (Required): *Abstract Algebra*, 3rd edition, by John Beachy and William Blair. An online study guide to accompany the text is available here:
http://www.math.niu.edu/~beachy/abstract_algebra/guide/contents.html
Supplementary Texts: (not required)
>   *Contemporary Abstract Algebra*, J. Gallian (undergrad)
>   *A First Course in Abstract Algebra*, Fraleigh (undergrad)
>   *Topics in Algebra*, Herstein (advanced undergrad)
>   *Abstract Algebra*, Dummit and Foote (advanced undergrad/grad - verbose)
>   *Algebra*, Hungerford (grad classic- terse)

WEEKLY QUIZZES: There will be a 10 point quiz at the beginning of class each Friday. This quiz will cover material through the previous class. Quiz questions will be similar (but certainly not limited) to homework questions. The 10 best quiz scores will be kept, and the rest will be dropped. There will be no make up quizzes given.

READING QUIZZES: Periodically you will be assigned reading in the text followed by a reading quiz on Canvas. The grades for these online quizzes will fall under "homework".

LATEX: As part of our objective to "write" mathematics (as well as to learn it and to speak it) we will learn to use the mathematical typesetting program LATEX. LATEXis the standard typsetting tool of mathematicians all over the world. Whether you will be teaching, working in business or in academia, LATEXwill be useful for preparing mathematical documents. See my website for information on installing and running LATEX. You may use any version of LATEXthat you are familiar with.

HOMEWORK: Homework will be assigned after each section, but most of it will not be collected. Some problems will be assigned to be typed in LATEXand handed in for grading. There will be some opportunities to ask questions about the homework problems in class. However, there will not be time to go over every homework problem. You are welcome to discuss homework problems in office hours and ask questions by e-mail. You are encouraged to work together in groups on the homework problems. However, any work that you turn in must be your own.

PREPARING FOR CLASS: Before each class you should read the section that is to be covered. Sometimes this will be reinforced with a reading quiz. Write down any definitions or theorems on index cards. Use these cards to study for the quizzes and exams. You should know the definitions for quizzes and exams. You do not have to know the definition word for word from the text or the notes, but it should be *correct* and *complete.* Online notes will be provided. Print a copy of these notes to bring to class on the day the section will be covered.

MIDTERMS and FINAL: There will be three midterms during the semester and a final exam each worth 100 points. If you cannot make it to a scheduled exam, you MUST contact the instructor BEFORE the exam if at all possible, or if an emergency, WITHIN 24 HOURS after the exam if you need to schedule a make up exam. Make up exams will only be given for extreme excuses. A doctor's note or some other physical excuse is required.

GRADING: The grading will be assigned on the following scale:
  A: 90-100%,
  B: 80-89%,
  C: 70-79%,
  D: 60-69%,
  F: Below 60%.

There will be no curves and no extra credit. I will assign +/- on an individual basis. WF's will not be assigned. Points are assigned as follows:
  Quizzes (10) - 100 points,
  Midterm exams (3) - 100 points each,
  Homework/reading quizzes - around 80 points,
  Final exam - 150 points.

HONOR CODE: You are to abide by the JMU honor code at all times. Ignorance of the law is no excuse. Cheating will not be tolerated and will be prosecuted to the fullest extent. Please familiarize yourself with the honor code here: `http://www.jmu.edu/honorcode/`. When turning in homework or group work, you may work together and discuss the problems, but you must write up the homework to turn in **by yourself**. Every answer requires an explanation, and no two student's explanations will be exactly the same. Copying someone else's homework or copying something from the internet (words or ideas) and putting your name on it is a violation of the Honor Code, even if you change the words around. Do not share your LaTeXcode with anyone. You are welcome to look at each other's code, but do not share files, and do not copy code from someone else word for word.

UNIVERSITY POLICIES For University policies for attendance, inclement weather, disability accommodations and religious accommodations, please see: `http://www.jmu.edu/syllabus/`

FIRST WEEK ATTENDANCE POLICY: At the instructor's discretion, any student registered for a class in the Department of Mathematics and Statistics who does not attend at least one of the first two scheduled meetings of the class (or does not attend the first scheduled meeting of a class that meets once a week) MAY be administratively dropped from the class. Students will be notified by e-mail if they will be dropped. Students who fail to attend should not assume they will be administratively dropped by their instructor; it is the students responsibility to drop the course on their own or they will receive a grade at the end of the semester. All students are responsible for verifying the accuracy of their schedules and changes made in their schedules.

ADDITIONAL HELP: You are encouraged to work together in this class and form study groups. TALK about mathematics with each other. WRITE down your thoughts and ideas. SHARE these ideas with your group and with the class. Go to the library or internet and research topics that interest you or are difficult for you. The supplementary texts listed above are a starting place. You are welcome to e-mail questions to me, but if you are referring to a homework problem, please include the entire question, because I may not have access to a book when I answer your e-mail.

LEARNING: Your goal in this class is to learn Abstract Algebra. My role is to facilitate that learning. You will get out of this class what you put in to it. There are no shortcuts. Learning is not easy. It takes effort and persistence. It is a struggle. Do not see your mistakes as failures, but rather as learning opportunities! It is the struggle that leads to learning. Embrace the challenge.