Math 591 Abstract Algebra and Number Theory  
Summer 2016

Instructor: Professor Richard Grassl
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ClassTime: MTWR, 1:15 – 4PM July 5 – July 28
Course Location: Ross Hall 2060

Course Texts: Instructor authored booklets, provided by the department: Some Abstract Algebra - A Primer, along with Abstract Algebra - An Interactive Workbook.

Course Prerequisite: Undergraduate degree in mathematics and/or instructor /School Director advisement, along with willingness to put forth a strong, consistent effort from beginning to end.

Course Description: A problem solving approach to a survey of core abstract algebra topics. Content includes groups, rings, integral domains, fields, and some number theory related results. Operations include rotations of regular geometrical figures, ordinary and modular addition and multiplication, composition of permutation cycles, direct products.

Core Course Questions
• Why is the idea of proof important?
• How can we make CONCRETE the connections that exist between abstract algebra and secondary mathematics?
• Why do we care about these abstract structures so much?
• How useful is the idea of isomorphisms?

Course Objectives: Consistent with the NCTM Curriculum and Evaluation Standards for School Mathematics the following objectives are targeted:

- Represent problem solving situations using abstract algebra.
- Develop data organizational skills by constructing group operational tables.
- Develop and strengthen problem solving techniques by analyzing group tables.
- Develop and strengthen methods of proof.

Approaches to learning content include using some traditional instruction, cooperative learning, individual homework, and considerable classroom discussion.

Course Activities: You will be required to read the majority of the text material, work through the worksheets, submit and maintain a homework notebook, work in groups, and complete daily take home assignments.

Evaluation: Your course grade will be based on your increasing success on the evaluation instruments. There is no curve, so you should work closely with one another.
Evaluation instruments:
1. 25% - Class participation, presentations, projects
2. 75% - Weekly take home exams
Course is graded A-D with the standard 90%–80%–70%–60% system.

Disability Support Services: Students who believe that they may need accommodations in this class are encouraged to contact Disability Support Services at (970)351-2289 as soon as possible to ensure that accommodations are implemented in a timely fashion.

Honor Code: All members of the University of Northern Colorado community are entrusted with the responsibility to uphold and promote five fundamental values: Honesty, Trust, Respect, Fairness, and Responsibility. These core elements foster an atmosphere, inside and outside of the classroom, which serves as a foundation and guides the UNC community's academic, professional, and personal growth. Endorsement of these core elements by students, faculty, staff, administration, and trustees strengthens the integrity and value of our academic climate.

UNC's Policies: UNC's policies and recommendations for academic misconduct will be followed. For additional information, please see the Dean of Student’s website, Student Handbook link http://www.unco.edu/dos/handbook/index.html