# Abstract Algebra (Math 470) Fall 2022 Schedule

**MW 4 pm to 5:15 pm in Markstein Hall**

Text: Contemporary Abstract Algebra 9th Edition by Joseph A. Gallian

◄ August

## September 2022

October ►

| Sun | Mon | Tue | Wed | Thu | Fri | Sat |
|---|---|---|---|---|---|---|
| | **Aug. 29**<br>**First Day of Classes**<br>Introductions and expectations<br>**What is Abstract Algebra?** | **Aug. 30** | **Aug. 31**<br>**Ch. 0: Preliminaries** | **1** | **2** | **3** |
| **4** | **5**<br>**Labor Day, no class** | **6** | **7**<br>**Ch. 1: Intro to Groups. Examples** | **8** | **9** | **10** |
| **11** Homework 1 Due | **12**<br>**Ch. 2: Groups. Elementary Properties** | **13** | **14**<br>**Ch. 2: Groups. Elementary Properties** | **15** | **16** | **17** |
| **18** | **19**<br>**Ch. 2: Groups. Elementary Properties** | **20** | **21**<br>**Ch. 3: Finite Groups; Subgroups** | **22** | **23** | **24** |
| **25**<br>Homework 2 Due | **26** **Quiz 1**<br>**Ch. 3: Finite Groups; Subgroups** | **27** | **28**<br>**Ch. 4: Cyclic Groups** | **29** | **30** | |

◄ September

# October 2022

November ►

| Sun | Mon | Tue | Wed | Thu | Fri | Sat |
|---|---|---|---|---|---|---|
| | Sept. 26 Quiz 1<br>Ch. 3: Finite Groups; Subgroups | Sept. 27 | Sept. 28<br>Ch. 4: Cyclic Groups | Sept. 29 | Sept. 30 | 1 |
| 2 | 3<br>Ch. 5: Permutation Groups | 4 | 5<br>Ch. 6: Isomorphisms (and a bit about Homomorphisms) | 6 | 7 | 8 |
| 9 Homework 3 Due | 10<br>Ch. 6: Isomorphisms (and a bit about Homomorphisms) | 11 | 12<br>Ch. 7: Cosets and Lagrange's Theorem | 13 | 14 | 15 |
| 16 | 17<br>Ch. 7: Cosets and Lagrange's Theorem | 18 | 19<br>Ch. 8: External Direct Products | 20 | 21 | 22 |
| 23<br>Homework 4 Due | 24 Quiz 2<br>Ch. 9: Normal Subgroups and Factor Groups (Quotient Groups) | 25 | 26<br>Ch. 9: Normal Subgroups and Factor Groups (Quotient Groups) | 27 | 28 | 29 |
| 30 | 31 Ch. 10: Group Homomorphisms<br>  | | | | | |

◄ October

# November 2022

December ►

| Sun | Mon | Tue | Wed | Thu | Fri | Sat |
|---|---|---|---|---|---|---|
| | Oct. 31 Ch. 10: Group Homomorphisms | 1 | 2 Ch. 10: Group Homomorphisms and Statement of the Fundamental Theorem of Finite Abelian Groups | 3 | 4 | 5 |
| 6 Homework 5 Due | 7 Primary Source Project: Holder's Quotient Group Concept | 8 | 9 Primary Source Project: Holder's Quotient Group Concept | 10 | 11 Veterans Day | 12 |
| 13 | 14 Ch. 12: Introduction to Rings | 15 | 16 Ch. 12: Introduction to Rings | 17 | 18 | 19 |
| 20 Homework 6 Due **Primary Source Project Due** | 21 Quiz 3 Ch. 13: Integral Domains | 22 | 23 Asynchronous Class. Watch *The Proof*, a documentary about the proof of Fermat's Last Theorem | 24 Thanksgiving holiday | 25 Thanksgiving holiday | 26 |
| 27 | 28 Ch. 14: Ideals and Factor Rings (Quotient Rings) | 29 | 30 Ch. 15: Ring Homomorphisms | | | |

◄ November

# December 2022

January ►

| Sun | Mon | Tue | Wed | Thu | Fri | Sat |
|---|---|---|---|---|---|---|
| | Nov. 28<br>Ch. 14: Ideals and Factor Rings (Quotient Rings) | Nov. 29 | Nov. 30<br>Ch. 15: Ring Homomorphisms | 1 | 2 | 3 |
| 4<br>Homework 7 Due | 5<br>Ch. 16: Polynomial Rings | 6 | 7<br>Ch. 16: Polynomial Rings | 8 | 9<br>Last day of classes | 10 |
| 11 | 12 **Final Exam 4-6 pm in Markstein Hall 208** | 13 | 14 | 15 | 16 | 17 |
| 18 | 19 | 20 | 21 | 22<br>Grades due from instructors | 23 | 24 |
| 25 | 26 | 27 | 28 | 29 | 30 | 31 |

## Possible Grading Scheme

| | |
|---|---|
| Homework | 25% |
| Primary Source Project | 15% |
| Quiz 1 | 10% |
| Quiz 2 | 15% |
| Quiz 3 | 15% |
| Final | 20% |