Lessons 1-2: Chapter 0. Preliminaries
Integers, Modular arithmetic, Induction, RST relations, Functions
Lesson 3: Chapter 1 Introduction to Groups
Definitions, Examples, Elementary properties, History
Lessons 4-5: Chapter 2. Groups
Definitions, Examples, Elementary properties.
Lessons 6-8: Chapter 3. Finite Groups Terminology, Notation, Subgroups, Examples
Lesson 9 (Sep 8): TEST 1
Lessons 10-11: Chapter 4. Cyclic groups
Properties, Subgroups, Classification
Lessons 12-13: Chapter 5. Permutation Groups
Definition, Notations, Cyclic notation, Properties
Lessons 14-16: Chapters 6 & 10 Isomorphisms and Homomorphisms
Motivation, Definition, Examples, Cayley’s Theorem, Properties, Automorphisms, First Isomorphism Theorem.
Lessons 17-19: Chapter 7. Cosets and Lagrange’s Theorem
Definition, Lagrange’s Theorem, Applications, Rotation groups
Lesson 20 (Oct 4): TEST 2
Lessons 21-23: Chapter 9. Normal Subgroups and Quotient Groups
Definitions, Applications, Internal Direct Product
Lessons 24-25: Chapter 8 External Direct Products
Definition, Examples, Properties, Group of units mod n, Applications
Lessons 26-27: Chapter 11. Fundamental theorem of Abelian groups
Statement, Isomorphism Classes, Examples
Lesson 28 (Oct 25) TEST 3:
Lessons 29-30: Chapter 12. Introduction to Rings
Motivation, Definitions, Examples, Properties, Subrings
Lessons 31-32: Chapter 13. Integral Domains
Definition, Examples, Fields, Characteristic of a ring
Lessons 33-34: Chapter 14. Ideals and Quotient Rings
Ideals, Quotient ring, Prime Ideals, Maximal Ideals
Lessons 35-36: Chapter 15. Ring Homomorphism
Definition, Examples, Properties, Field of Quotients
Lessons 37-38: Chapter 16. Polynomial Rings
Notations, Division Algorithm, Consequences
Lessons 39-40: Chapter 17. Factorization of Polynomials
Reducibility, Unique factorization domains.
Lessons 42-45: Revision

To qualify for a make-up test, please supply solid documentation.

All special students please see me in person at least 2 weeks before the first test.