Absract Algebra, Unit 1 Plan, F2021

Tues	Thurs
Aug 17, 2021	Aug 19, 2021
	1.1 Ancient Mathematics *Please read 1.1 before class.* In class today: • D 1.1: 2, 4(i)(ii), 8, 11, 12, 14
Aug 24, 2021	Aug 26, 2021
1.2 Diophantus Due today: • Read 1.2, RQ 1.2 • D 1.2: 21, 22*, 26, (31*) • Read 1.3 (up to p28), RQ 1.3-I	1.3 Euclid-I Due today: • W 1.2: 27 • D 1.3: Extra 1.3 Exercise, 41*, 44, 46*, 47*, 48 • Read 1.3 (finish); RQ 1.3-II
Aug 31, 2021	Sep 2, 2021
1.3 Euclid-II **Quiz 1** (Divisibility) Due today: • W 1.3: 49* • D 1.3: 55(ii), 56, 57, 60, (76(i)) • Read 1.4; RQ 1.4	1.4 Nine Fundamental Properties Preview 2.1 Induction Due today: • W 1.3: 58 • D 1.4: 68, 69, Extra 1.4 Problem • Read 2.1; RQ 2.1
Sep 7, 2021	Sep 9, 2021
2.1 Induction and Unique Factorization Due today: • W 1.4: 71 • D 2.1: 3, 12(i)*, 13, 14,15*-W • Read 2.2, 3.1; RQ 2.2 and 3.1	2.2 Binomial Theorem; 3.1 Classical Formulas **Quiz 2** (Unique Factorization) Due today: • W 2.1: 15* • D 2.2: 32; D 3.1: 2*, 14, 15, (17) • Read 3.2; RQ 3.2
Sep 14, 2021	Sep 16, 2021
3.2 Complex Numbers Due today: • W 3.1: 3* • D 3.2: 21*, 23*, 27, 38, 39*, 40, 41* • Read 3.3-4, RQ 3.3-4	*No Class*
Sep 21, 2021	Sep 23, 2021
Exam 1 *Exam will be 65 minutes; we'll have a 5 minute break, and then a 10 minute preview of A.1.*	3.3 Roots and Powers & 3.4 Gaussian and Eisenstein Integers Due today: • W 3.2: 35 • D 3.3-4: 50*, 52, 71, 73 • Read A.1, A.2, RQ A.1-2

*An asterisk next to a problem indicates that I have modified the problem or provided a hint.
(A problem in parentheses is a challenge problem. Make sure you understand the other problems before attempting the challenge problems.)

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Mon	Wed	Fri
1.3 Euclid-I Divisibility, Primes, Division Algorithm (p 20-24) Need new RQ (first half of RQ 1.3-I from 2019?). For 1.3-I D: Prove: An integer m>1 is prime iff it has no factorization m=ab where |a| and |b| < m. and 1.41*, 1.44. 1.3-I W: 1.46*.	1.3 Euclid-I GCDs, Linear Combinations, Euclid's Lemma, Thm. 1.19 Need new RQ (second half of RQ 1.3-I from 2019?) For 1.3-II D: Prove: There are no integers a, b such that (a/b)^2=3. and 1.38, 1.47 (parts?), 1.48 (new), Thm. 1.19. For 1.3-II W: 1.49* (hard).	1.3 Euclid-III Euclidian Algorithm I and II **Quiz 1** (Divisibility) RQ should be same as RQ 1.3-II from 2019. D & W from 1.3-II 2019 should work.