Math 620 — High School Math from an Advanced Perspective I

Instructor: Office Hours:	Email: Prerequisite: Department Permission.
Course Materials:	<u>The Mathematics That Every Secondary School Math Teacher Needs to Know</u> by Alan Sultan and Alice F. Artzt, 2 nd Edition, Routeledge. ISBN: 978-1-138-22860-3 (hardback) ISBN: 978-1-138-22861-0 (paperback) ISBN: 978-1-315-39190-8 (e-book)
	You will also need a 1- or 2-line display <i>scientific</i> calculator, as well as a physical or electronic notebook.
Syllabus:	We cover most of Chapters $1-5$, as well as some supplemental material.
Learning	Upon successful completion of this course, students will have an understanding
Outcomes:	from an advanced perspective, of various topics they will be teaching their 7th to 12th grade mathematics classrooms. More specifically:
	1. Students will be able to analyze and construct common types of proofs including direct proofs, proofs by contradiction, proofs by counterexample, and proofs by induction.
	2. Students will be able to explain and apply the division algorithm for both integers and polynomials.
	3. Students will be able to derive and apply strategies for solving all polynomial equations up to and including degree three.
	4. Students will be able to explain and apply the rules of divisibility for integers and modular arithmetic.
	5. Students will be able to explain and apply geometric concepts related to area, triangles, and circles.
	6. Students will be able to derive and apply trigonometric concepts including the law of sines, the law of cosines, and trigonometric ratios of sums.
Homework:	Homework is assigned with each section. As in any math class, doing the homework thoroughly is essential to understanding and success in the course. Homework and participation are 20% of your course grade.

- Continued on the reverse side. -

Exams: There are two midsemester exams and a cumulative Final Exam. Exam I and II will each count once and the Final will count twice with the lowest grade dropped.

Grade Summary: Your total score for the course will be calculated in the following manner:

- 20% Homework and Participation80% Exams (E1, E2, Fin, Fin; Lowest of These Four Dropped)
- General Remarks: **Be responsible for your own learning!** This can't be stressed enough. It is up to you to find the best way for you to assimilate these ideas. Read the text, read your notes, do all the homework until you understand every problem, and think about the concepts as much as you can. Work on the course often—every day if possible! Don't be afraid to ask questions, and seek help when you need it. It is better to study often in small doses than infrequently for long periods. If you still find yourself struggling with the course, please seek assistance from the college's tutoring and academic support services. This is available at the Dolciani Mathematics Learning Center on the 7th floor of the college library.

"Hunter College regards acts of academic dishonesty (e.g., plagiarism, cheating on examinations, obtaining unfair advantage, and falsification of records and official documents) as serious offenses against the values of intellectual honesty. The College is committed to enforcing the CUNY Policy on Academic Integrity and will pursue cases of academic dishonesty according to the Hunter College Academic Integrity Procedures"

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Note: I reserve the right to adjust this syllabus as required to address the needs of the class.