WEEKLY SCHEDULE FALL 2025

MAT8002 Numeracy and Logic
Course sections: 020, 030

Professor's Name: Sofia Borok
Contact: email: boroks@algonquincollege.com; office: B311

Learning Resources

Required Resources:

Bill Deem and Tony Zannini, Electronics and Computer Math 8 th Ed. (Custom Edition for Algonquin College), Pearson Publications 2006, **ISBN: 1256316296**

Calculator: Any non-graphing scientific calculator is acceptable for this course. We recommend you talk with your core program courses to see if there is a calculator preference. Graphing calculators of any kind and cellphones will **NOT** be allowed during any quizzes, tests or exams.

Other related materials will be provided in class as required.

Evaluation Summary:

Final grade is determined as follows:

Evaluation Component	Weight
4 HWK Quizzes (via Brightspace)	10%
4 Assignments (via Brightspace)	15%
2 Tests (in person)	15%
Midterm Exam (in person)	25%
Final Exam (in person)	35%
Total:	100 %

In-Class Test Topics – Detailed

Test Number	Topic	Weight
1	• Decimal Number System • Powers of Ten, Scientific Notation • Units and Prefixes	**7.5%**
2	• Boolean Algebra	**7.5%**

Exam Topics – Detailed

Exam	Topic	Weight
Midterm	• Decimal Number System • Powers of Ten, Scientific Notation • Units and Prefixes • Computer Number Systems (CNS)	**25%**
Final	• Decimal Number System • Powers of Ten, Scientific Notation • Units and Prefixes • Computer Number Systems (CNS) • Boolean Algebra • Statistics • Probability	**35%**

There are no re-writes for any tests or exams in this course

HWK Quiz and Assignment Topics – Detailed

HWK Quiz # and Assignment #	Topic(s)
1	• Decimal Number System • Powers of Ten, Scientific Notation • Units and Prefixes
2	• Computer Number Systems (CNS)
3	• Boolean Algebra
4	• Statistics • Probability

Learning Schedule

Tentative Weekly Schedule:

Week	Class	Topic – (textbook section)	Weight
	1	**Administrative Details** • Course Outline • Weekly Schedule (Course Section Information) **Decimal Number System**	

Week 1		• 1-1 Decimals and the Decimal Number System • 1-2 Decimal Fractions • 1-3 Whole Numbers and Fractions • Percent and Percentage • 1-4 Rounding Whole Numbers • 1-5 Rounding Non-whole Numbers • 1-6 Significant Digits	
	2	**Decimal Number System** • 1-7 Addition and Subtraction of Signed Numbers • 1-8 Multiplication and Division of Signed Numbers • 1-9 Mathematical Expressions and Terms • 1-10 Order of Operations	
Week 2	1	**Powers of Ten** • 2-1 Converting Numbers to Powers of 10 Form • 2-2 Converting from Powers of 10 form to Numbers • 2-3 Converting Decimal Fractions to Powers of 10 Form • 2-4 Converting Powers of 10 to Decimal Fractions • 2-5 Multiplication in Powers of 10 Form • 2-6 Division in Powers of 10 Form • 2-7 Combined Multiplication and Division in Powers of 10 Form • 2-8 Converting Between Regular Numbers and Powers of 10 Notation	
	2	**Powers of Ten** • 2-9 Expressing Numbers > 1 in Scientific Notation • 2-10 Expressing Numbers < 1 in Scientific Notation • 2-11 Addition and Subtraction in Scientific Notation • 2-12 Estimating • 2-13 Problems with Complex Denominators • 2-14 Reciprocals • 2-15 Raising a Power of 10 to a Power • 2-16 Square and Cube Roots of Powers of 10 • 2-17 Squaring Numbers • 2-18 Square Roots of Numbers **Units and Prefixes** • 3-1 Units • 3-2 Prefixes • 3-3 Converting Numbers with Prefixes to Basic Units	
Week 3	1	**Units and Prefixes** • 3-4 Changing Prefixes • 3-5 Applications • 3-6 Systems of Measurement	
	2	**Review for Test #1**	
	1	**HWK Quiz #1 Due**	**2.5%**

Week 4		**Assignment #1 Due** **Test #1**	**3.75%** **7.5%**
	2	**Computer Number System (CNS)** • 24-1 Binary Number System • 24-2 Octal Number System • 24-3 Hexadecimal Number System • 24-4 Binary to Octal to Hexadecimal Conversions • 24-5 Binary to Octal to Decimal to Hexadecimal Conversions **Computer Number System (CNS)** • 24-6 Decimal and Octal Addition • 24-7 Adding Hexadecimal Numbers	
Week 5	1	**Computer Number System (CNS)** • 24-6 Decimal and Octal Addition • 24-7 Adding Hexadecimal Numbers	
	2	**Computer Number System (CNS)** • 24-8 Adding Binary Numbers • 24-9 Decimal and Octal Subtraction	
Week 6	1	**Computer Number System (CNS)** • 24-10 Subtracting Hexadecimal Numbers • 24-11 Subtracting Binary Numbers	
	2	**Computer Number System (CNS)** • 24-12 Complement Method of Subtraction (1 and 2) • 24-13 Complement Method of Subtraction (8 and 16) **Computer Number System (CNS)** • Complement Method of Subtraction (9 and 10) • Multiplying and Dividing Binary Numbers	
Week 7	1	**Computer Number System (CNS)** • Complement Method of Subtraction (9 and 10) • Multiplying and Dividing Binary Numbers **Review for Midterm Exam**	
	2	**HWK Quiz #2 Due** **Assignment #2 Due** **Midterm Examination**	**2.5%** **3.75%** **25%**
Week 8		**College Study Break Week - (No Classes)**	
Week	1	**Boolean Algebra** • 25-1 Logic Gates	

9		• Logic Operators (AND, OR, NOT, NAND, NOR, XOR, XNOR)	
	2	**Boolean Algebra** • Truth Tables • 25-2 Boolean Postulates and Theorems	
Week 10	1	**Boolean Algebra** • 25-3 De Morgan's Theorem	
	2	**Boolean Algebra** • Absorption Theorem • XOR and XNOR	
Week 11	1	**Boolean Algebra** • XOR and XNOR • Consensus Theorem **Review for Test #2**	
	2	**Review for Test #2**	
Week 12	1	**HWK Quiz #3 Due** **Assignment #3 Due** **Test #2**	**2.5%** **3.75%** **7.5%**
	2	**Statistics** • Introduction • Sampling Methods • Variables • 26-1 Frequency Distributions and Histogram • 26-2 Measure of Central Tendency (Mean, Median, Mode)	
Week 13	1	**Statistics** • 26-3 Measure of Dispersion • 26-4 The Normal Distribution • The Uniform Distribution • Mean Time Between Failures (MTBF)	
	2	**Statistics** • Mean Time to Failure (MTTF) **Probability** • Introduction **Probability** • Objective and Subjective Probability • Multiplication, Permutations and Combination Principles	

Week 14	1	**Probability** • Objective and Subjective Probability • Multiplication, Permutations and Combination Principles	
	2	**Probability** • Addition, Complement and Multiplication Rules • Discrete Probability Distribution **HWK Quiz #4 Due** **Assignment #4 Due** **Final Exam Review**	**2.5%** **3.75%**
Week 15		**Final Examination**	**35%**

Other Important Information

- Important dates to keep in mind for F25 term

Sep. 2	AC Day 1 (no classes)
Sep. 3	First Day of classes
Sep. 15	Last day for official withdrawal for F25 with full tuition refund
Oct. 13	Thanksgiving (College closed)
Oct. 20-24	Midterm Break
Nov. 7	Last day to withdraw from F25 courses without academic penalty
Dec. 6-13	Final Assessment Week for most post-secondary programs
Dec. 25-Jan 1	Holiday Break (College closed)

- Minimum passing score for this course is 50%
- All tests and exams in this course will be written in person in class
- MAT8002 is a 3 hours per week course.
- The final examination schedule can be found in ACSIS about 1.5 months prior to the final assessment week. The College takes precautions to avoid conflicts with other courses from the same academic level. However, if you note a conflict, it is your responsibility to alert the professors of the issue in order to come up with appropriate alternative arrangements. You must inform the professors no later than one week before final exam week begins. If, for any reason, an alternative cannot be found, make your program coordinator aware so they may assist in finding a solution.