George Brown College

COURSE NAME:	Mathematics for Computer Technology II
COURSE CODE:	MATH1162
CREDIT HOURS:	4
COURSE CONTACT HOURS:	56
PREREQUISITES:	MATH1071
COREQUISITES:	
EFFECTIVE DATE:	January 2017
PLAR ELIGIBLE:	YES (X) NO ( )

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EQUITY STATEMENT

George Brown College values the talents and contributions of its students, staff and community partners and seeks to create a welcoming environment where equity, diversity and safety of all groups are fundamental. Language or activities which are inconsistent with this philosophy violate the College policy on the Prevention of Discrimination and Harassment and will not be tolerated. The commitment and cooperation of all students and staff are required to maintain this environment. Information and assistance are available through your Chair, Student Affairs, the Student Association or the Human Rights Advisor.
George Brown College is dedicated to reducing barriers and providing equal access to education for students with disabilities. If you require academic accommodations, please contact the Accessible Learning Services office on your campus.

STUDENT RESPONSIBILITIES

Students should obtain a copy of the *Student Handbook* and refer to it for additional information regarding the grading system, withdrawals, exemptions, class assignments, missed tests and exams, supplemental privileges, and academic dishonesty. Students are required to apply themselves diligently to the course of study, and to prepare class and homework assignments as given. Past student performance shows a strong relationship between regular attendance and success.

COURSE DESCRIPTION

This Technical Mathematics course focuses on fundamentals in algebra including problem solving and graphing; the following main topics are covered:

- Review of fundamental algebraic operations
- Factoring and fractions in algebraic form
- Decimal, Binary and Hexadecimal Number System
- Exponents and radicals
- Quadratic Equations

ESSENTIAL EMPLOYABILITY SKILLS

As mandated by the Ministry of Training, Colleges and Universities essential employability skills (EES) will be addressed throughout all programs of study. Students will have theopportunity to learn (L) specific skills, to practice (P) these skills, and /or be evaluated (E) onthe EES outcomes in a variety of courses. The EES include communication, numeracy, critical thinking and problem solving, information management, interpersonal and personal skills. The faculty for this course has indicated which of the EES are either Learned (L), Practiced (P), orEvaluated (E) in this course:

Skill	L	P	E	Skill	L	P	E
1. communicate clearly, concisely and correctly in the written, spoken and visual form that fulfills the purpose and meets the needs of the audience	X	X	X	7. locate, select, organize and document information using appropriate technology and information sources	X	X	
2. respond to written, spoken or visual messages in a manner that ensures effective communication	X	X	X	8. show respect for the diverse opinions, values, belief systems, and contributions of others	X	X	
3. execute mathematical operations accurately	X	X	X	9. interact with others in groups or teams in ways that contribute to effective working relationships and the achievement of goals	X	X	
4. apply a systematic approach to solve problems	X	X	X	10. manage the use of time and other resources to complete projects	X	X	X

5. use a variety of thinking skills to anticipate and solve problems	X	X	X	11. take responsibility for one's own actions, decisions and consequences	X	X	
6. analyze, evaluate, and apply relevant information from a variety of sources	X	X					

COURSE OUTCOMES AND OBJECTIVES

Upon successful completion of this course the students will have reliably demonstrated the ability to:
1. Employ standard mathematical language and symbolism to express his/her ideas.
2. Demonstrate an understanding of concepts and methods listed in the above Course Description.
3. Demonstrate mastery of above methods, solution procedures and mathematical tools.
4. Demonstrate and understanding of the relationships between different number systems.
5. Apply appropriate methods and principles to solve problems in their respective discipline.
6. Apply algebraic techniques in solving single-variable linear and quadratic equations.
7. Simplify algebraic expressions by factoring.
8. Simplify algebraic expressions involving fractions.
9. Solve for a single unknown in equations involving fractions.
10. Simplify algebraic expressions involving exponents and radicals.

DELIVERY METHODS

The course material is covered in class or assigned for study in a sequential order deemed appropriate by the Professor. Students are expected to be in attendance during time-tabled periods for:

- presentation of new material,
- homework assignments (on WebAssign),
- problem-solving examples,
- in class review of difficult homework problems,
- group discussions,
- quizzing and testing

LIST OF TEXTBOOKS AND OTHER TEACHING AIDS

- **Text book***
- **Handouts, supplied by the course Professor (as required)**
- **Scientific Calculator (bring to every class)**
- **Graph paper or Quad-lined Notebook**

***There are three textbook bundles available in the bookstore (students are required to purchase one of the bundles):**

I. ISBN# 0176595058

a. Aufmann/Lockwood: Intermediate Algebra (9-edition) – main text book
b. Practice Sheets (used in class)
c. EWA (WebAssign for Home work, includes e-copy of main text book)
d. Custom Book (4 additional chapters)

II. ISBN# 0176595031

a. Practice Sheets (used in class)
b. EWA(WebAssign for Home work, includes e-copy of main text book)
c. Custom Book (4 additional chapters)

III. ISBN# 9781305523678

a. Practice Sheets (used in class)
b. EWA(WebAssign for Home work, includes e-copy of main text book)

TESTING POLICY

Regarding In-Class Tests: It is the student's responsibility to inform the professor in writing (via email), within 10 days of course commencement of any religious, legal or other circumstances that will require the student's absence from a particular in-class test. A zero mark will automatically be recorded for any missed in-class tests. A rewrite will only be granted if unavoidable medical or legal circumstances can be substantiated by way of a verifiable official note. Once granted, the course Professor will make arrangements for a rewrite.
Students arriving late for an in-class test will only be allowed to write during the remaining allotted time. Once submitted to the Professor, the in-class test is considered finished and any latecomers will not be allowed to write. Whenever required, the course Professor will provide a formula sheet. However, other than for a scientific calculator, no other aids are permitted (no cell phones/ laptops, etc.); all tests are closed book.

ASSIGNMENT POLICY

Regarding WebAssign Assignments: Students must complete each homework assignment by the specified due date. The pass mark for each assignment is 75%. Once passed, 5% is added to the student's overall grade; labs must be completed on time.

EVALUATION SYSTEM

Assessment Tool:	Description:	Outcomes assessed:	EES assessed:	Due Date / Week:	% of Final Grade:
Test 1	Ch. 1 "Variable Expressions and Real Numbers"; Number Systems	1-5, 8	1-5, 10	Week 3	20
Test 2	Ch. 2 "First-Degree Equations and Inequalities";	1-3, 5-8	1-5, 10	Week7	20

	Ch. 5 "Polynomials"				
Test 3	Ch. 5 "Factoring"; Ch. 8 "Quadratic Equations"	1-3, 5-10	1-5, 10	Week 11	20
Test 4	Ch. 6 "Rational Expressions"; Ch. 7 "Exponents and Radicals"	1-5, 8	1-5, 10	Week 15	20
LAB 1	Variable Expressions and Real Numbers	1-5, 8, 9	1-5, 10	Week 4	2
LAB 2	First-Degree Equations and Inequalities	1-3, 5, 6	1-5, 10	Week 5	3
LAB 3	Polynomial	1-3, 5	1-5, 10	Week 6	3
LAB 4	Factoring	1-3, 5, 8	1-5, 10	Week 8	3
LAB 5	Quadratic Equations	1-3, 5- 7	1-5, 10	Week 11	3
LAB 6	Rational Expressions	1-3, 5, 7-9	1-5, 10	Week 12	3
LAB 7	Exponents and Radicals	1-3, 8-10	1-5, 10	Week 14	3
				TOTAL	100%

GRADING SYSTEM

The passing grade for this course is: 50%

A+	**90-100**	**4.0**	**B+**	**77-79**	**3.3**	**C+**	**67-69**	**2.3**	**D+**	**57-59**	**1.3**	**< 50**	**F**	**0.0**
A	**86-89**	**4.0**	**B**	**73-76**	**3.0**	**C**	**63-66**	**2.0**	**D**	**50-56**	**1.0**			
A-	**80-85**	**3.7**	**B-**	**70-72**	**2.7**	**C-**	**60-62**	**1.7**						

Excerpt from the College Policy on Student Code of Conduct and Discipline:
The ***minimal*** consequence for submitting a plagiarized, purchased, contracted, or in any manner inappropriately negotiated or falsified assignment, test, essay, project, or any evaluated material will be a grade of zero on that material. To view George Brown College policies please go to www.georgebrown.ca/policies.

TOPICAL OUTLINE

Week	Topic	Outcome	Content	Reference
1	1	1-3, 5, 8	Course Outline, Intro to class & testing policies, WebAssign 1. Variable Expressions and Real Numbers - Introduction to Real Numbers - Prime Factorization. LCM, GCF	Ch 1

			- Operation on Rational Numbers - Variable Expressions	
1-3	2	1-5	2. Binary and Other Number Systems - Decimal, Binary, Octal and Hexadecimal Bases. - Converting Between Bases	Handouts
3		1-5, 8	**TEST #1 (Topics 1, 2) 20%**	
4, 5	3	1-3, 5, 6	1. First-Degree Equations and Inequalities - Solving First-Degree Equations. - First-Degree Inequalities - Absolute Value Equations and Inequalities.	Ch 2
6, 7	4	1-3, 5, 7	4. Polynomials - Exponential Expressions - Multiplication of Polynomials - Division of Polynomials	Ch 5
7			**TEST #2 (TOPIC 3, 4) 20%**	
8			INTERSESSION BREAK	
9, 10	5	1-3, 5-7	5. Factoring - Factoring Polynomials. Special Factoring. Solving Quadratic Equations by Factoring.	Ch. 5
11	6	1-3, 5-7	6. Quadratic Equations - Solving Quadratic Equations by Factoring - Solving Quadratic Equations by Completing the Square. - Solving Quadratic Equations by Using the Quadratic Formula.	Ch. 8
11			**TEST #3(Topics 5, 6) 20%**	
12-13	7	1-3, 5-9	7. Rational Expressions - Multiplication and Division of Rational Expressions - Addition and Subtraction of Rational Expressions. - Complex Fractions. - Rational Equations.	Ch. 6
14-15	8	1-3, 5-10	8. Exponents and Radicals - Rational Exponents and Radical Expressions. Operations on Radical Expressions. Solving Equations Containing Radical Expressions.	Ch. 7
15		1-3, 5-10	**TEST #4 (Topics 7, 8) 20%**	

Note: The sequence of topics and the time allocation are estimated and may vary due to pedagogical reasons.
Please note: this schedule may change as resources and circumstances require. For information on withdrawing from this course without academic penalty, please refer to the College Academic Calendar: **http://www.georgebrown.ca/Admin/Registr/PSCal.aspx**