DAWSON
COLLEGE

Mathematics Department
Remedial Activities for Secondary IV Mathematics
201-016-50

Course Objectives:

This course prepares the student for subsequent courses in Mathematics by introducing the important concepts of algebra and by ensuring competency in proper algebraic manipulations.

Pre-Requisite:

There is no prerequisite for this course.

Ponderation: 2-3-3

Evaluation Scheme and Schedule:

The Institutional Student Evaluation Policy (ISEP) is designed to promote equitable and effective evaluation of student learning and is therefore a crucial policy to read and understand. The policy describes the rights and obligations of students, faculty, departments, programs, and the College administration with regard to evaluation in all your courses, including grade reviews and resolution of academic grievance. ISEP is available on the Dawson website.

Term Work:

The term work is based on a minimum of 4 ½ hours of tests/quizzes. A minimum of 3 class tests will be given.

Final Examination:

The Final Examination will be a supervised, comprehensive examination held during the formal examination period. No formula sheet is provided or allowed during the Final Examination.

Grading Policy:

Term work = 60% of final grade. Final Exam = 40% of final grade.

To pass the course, the students must obtain at least 60%.

Required Text and Materials:

Text: Remedial Activities for Sec. IV Mathematics (201-016-50) by Noushin Sabetghadam. – (available online in pdf file and also in bookstore)

References: 1) Beginning Algebra (10th ed.) by Lial, Hornsby and McGinnis

Course Competences:

Remedial Activities for Secondary IV Mathematics: Technical and Scientific Option	
Objective	***Standard***
Statement of the Competency	**Performance Criterion (for the competency as a whole)**
Analyze problems by using concepts in algebra and geometry.	• Use of appropriate terminology
Elements of the Competency	**Performance Criteria**
1. Manipulate numerical and algebraic expressions.	• Appropriate factoring of algebraic expressions (finding the common factor and factoring by grouping, perfect square trinomial, difference of two squares) • Correct application of the properties of exponents and radicals
2. Analyze situations by using real functions.	• Appropriate modelling of the situation • Appropriate use of the multiplicative parameters • Correct determination of the properties (domain, range, sign, variation, extrema, x- and y- intercepts) of an exponential, second-degree polynomial or piecewise function • Interpretation and graphical representation of a periodic function and of the inverse of an exponential or second-degree polynomial function • Accurate interpretation of results
3. Solve problems by using equations.	• Appropriate modelling of the problem • Correct application of the methods for solving second-degree equations (factoring and zero product rule) • Correct application of the methods for solving exponential equations, with or without logarithms (definition and changing bases) • Correct application of the methods for solving systems of linear equations in two variables • Accurate interpretation of results
4. Solve problems by using analytic geometry.	• Appropriate modelling of the problem • Proper use of trigonometric relations in triangles • Correct determination of the relative position of two straight lines, the equation of a line, the distance between two points and the coordinates of a point of division • Accurate interpretation of results

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Calculators: Students are only permitted to use the Sharp EL-531XG or XT calculator during tests and examinations.

Teaching Methods:

Lectures and problem sessions

Attendance and Course Participation Requirements:

Students should refer to the Institutional Student Evaluation Policy (ISEP section III-C) regarding attendance.

Attendance is recommended for the successful completion of the course.

Literacy Standards:

Problem solving is an essential component of this course. Students will be expected to analyze problems stated in words, to present their solutions logically and coherently, and to display their answers in a form corresponding to the statement of the problem, including appropriate units of measurement. Marks will be deducted for work which is inadequate in these respects, even though the answers may be numerically correct.

Student Obligations

a) Students have an obligation to arrive on time and remain in the classroom for the duration of scheduled classes and activities.

b) Students have an obligation to write tests and final examinations at the times scheduled by the teacher or the College. Students have an obligation to inform themselves of, and respect, College examination procedures.

c) Students have an obligation to show respectful behavior and appropriate classroom deportment. Should a student be disruptive and/or disrespectful, the teacher has the right to exclude the disruptive student from learning activities (classes) and may refer the case to the Director of Student Services under the Student Code of Conduct.

d) Electronic/communication devices (including cell phones, mp3 players, etc.) have the effect of disturbing the teacher and other students. All these devices must be turned off and put away. Students who do not observe these rules will be asked to leave the classroom.

Everyone has the right to a safe and non-violent environment. Students are obliged to conduct themselves as stated in the Student Code of Conduct and in the ISEP section on the roles and responsibilities of students. (ISEP section II-D)

Academic Integrity:

I) Cheating in Examinations, Tests, and Quizzes
Cheating includes any dishonest or deceptive practice relative to formal final examinations, in-class tests, or quizzes. Such cheating is discoverable during or after the exercise in the evaluation process by the instructor. Such cheating includes, but is not limited to:

a) Copying or attempting to copy another's work.
b) Obtaining or attempting to obtain unauthorized assistance of any kind.
c) Providing or attempting to provide unauthorized assistance of any kind.
d) Using or possessing any unauthorized material or instruments which can be used as information storage and retrieval devices.
e) Taking an examination, test, or quiz for someone else.
f) Having someone take an examination, test, or quiz in one's place.

II) Unauthorized Communication:
Unauthorized communication of any kind during an examination, test, or quiz is forbidden and subject to the same penalties as cheating.

III) Plagiarism on Assignments and the Comprehensive Examination
Plagiarism is the presentation or submission by a student of another person's assignments or Comprehensive Assessment as his or her own. Students who permit their work to be copied are considered to be as guilty as the plagiarizer.

IV) Penalties
Cheating and plagiarism are considered extremely serious academic offences. Action in response to an incident of cheating and plagiarism is within the authority of the teacher.
Penalties may range from zero on a test, to failure in the course, to suspension or expulsion from the college.

According to ISEP, the teacher is required to report to the Sector Dean all cases of cheating and plagiarism affecting a student's grade. (See ISEP section IV-C.)

Intensive Course Conflicts & Policy on Religious Observance:

If a student is attending an intensive course, the student must inform the teacher, within the first two weeks of class, of the specific dates of any anticipated absences.

Students who intend to observe religious holidays must inform their teachers, in writing, within the f**irst two weeks of the semester** as prescribed in the ISEP Policy on Religious Observances. (ISEP, Section IV D). This includes any religious holidays that occur during the final exam period. Please refer to the academic calendar for the exact dates.

It must be emphasized, however, that this College policy should not be interpreted to mean that a student can receive credit for work not performed. It is the student's responsibility to fulfill the requirements of the alternative arrangement.

A form for this purpose is available at the end of this document.

Math Tutorial Room: Volunteer math teachers are available for help in room 7B.1 from 10:00 to 16:00 (Monday through Friday) and from 17:00-18:00 (Monday through Thursday).

Course Content

(The number of weeks given below are approximate)

Chapter 1. Pre-algebra Review (Optional) (0.5 weeks)

1.1 Sets of Numbers and their operations……..…. 1
1.2 Operations on Rational Numbers…….. 4
1.3 Exponents…….. 6

Chapter 2. Polynomials, Roots and Radicals (4.5 weeks)

2.1 Integer Exponents in Algebra……..…. 8
2.2 Polynomials and Their Operations…… 11
2.3 Factoring…… 15
2.4 Rational Expressions (Fractions)…….. 24
2.5 Roots and Radicals…… 31

Chapter 3. Equations and Inequalities (5.5 weeks)

3.1 Solving Linear Equations…..…….……..…. 37
3.2 Formulas…… 43
3.3 Solving Systems of Two Equations..…….…… 48
3.4 Solving Quadratic Equations…..…….…….. 54
3.5 Solving Equations Containing Fractions..…….…… 62
3.6 Solving Radical Equations……..…….. 66
3.7 Solving Exponential Equations and Logarithm…… 71
3.8 Solving Linear Equations…..……..…….. 77

Chapter 4. Functions (4 weeks)

4.1 The Rectangular Coordinate System.…….……..…. 81
4.2 Introduction to Functions...…… 86
4.3 Linear Functions; the slope and the equation of a line…..…… 95
4.4 Quadratic Functions……..…..…….…….. 103

Chapter 5. Trigonometry (0.5 weeks)

5.1 Right Triangle Trigonometry…….…….……..…. 108

NOTE: All exercises are included in the above content.

RELIGIOUS OBSERVANCE/ INTENSIVE COURSES FORM

Students who intend to observe religious holidays or who take intensive courses must inform their teachers in writing as prescribed in the ISEP Policy on Religious Observance. (ISEP Section III-D)

The following form must be submitted within the first two weeks of classes.

Name: _____

Student Number: _____

Course: _____

Teacher: _____

Date:	**Description:**
_____	_____
_____	_____
_____	_____
_____	_____