Columbia College

Intermediate Mathematics for Professionals – (Math 102)

Lecture 1

Course Outline

Semester Dates: May 26th, 2014 – June 27th, 2014

Please note that when a holiday falls during the week, your class will be rescheduled for the Friday of that week. Students are required to make arrangements to be present at the rescheduled class.

Facilitator: Favour Simoongwe	Email: fsimoongwe@gmail.com
Class Time: Tuesdays and Thursdays 5:30 to 9:30 PM	Room: 805-105
Credit: Non Credit Course	Prerequisite: None

Note: It is the student's responsibility to be familiar with the information contained in the Course Outline and to clarify any areas of concern with the facilitator.

Course Description:

This course is designed to introduce students to a number of areas of mathematics that support the development of higher critical thinking and problem solving skills in the application of math concepts to real-world situations. The course will cover the following topics: Organizing Data; Linear Systems; Non-Linear Equations; Systems of Equations; Range, Mean, Medium Mode; Measurements; Geometry, Volume and Capacity; and Finance. Different focus will be applied to each of the areas covered based on the degree of relevancy and application for the various professions being pursued by the students in the class. This is a 5 week, 40 hour course that meets twice a week for 4 hours each class.

Learning Outcomes:

As a result of active participation in these sessions, a student can expect to:

- Analyze graphs or charts of given situations to derive specific information.
- Represent and analyze quadratic, polynomial, and rational functions, using technology as appropriate.
- Represent and analyze situations that involve expressions, equations, and inequalities.
- Use linear programming to solve optimization problems.
- Understand and analyze data for range, mean, medium, mode, variance and standard deviation
- Solve consumer problems, using arithmetic operations.
- Develop and apply the geometric properties of circles and polygons to solve problems.
- Demonstrate an understanding of scale factors and their interrelationship with the dimensions of similar shapes and objects.
- Use measuring devices to make estimates and to perform calculations in solving problems.

Course Format:

This course uses a variety of teaching/learning methods including discussion, personal reflection, experiential exercises, student presentations, role-plays, group activities and especially case studies. Our faculty aims to create a learning environment where the learner is actively engaged in inquiry, critical thinking and problem solving. The classroom provides you with a place where you can learn with and from others in a cooperative and collaborative manner.

You are expected to take a very active part in class discussions and take responsibility for your own learning. Be a positive and co-operative team member. Columbia College uses a facilitation model of instruction where the facilitator's role is to facilitate your learning. The expectation is that you will come to class prepared with pre-class homework completed. Your facilitator will engage you in activities that are based on your completed homework and readings. Your enthusiastic and positive approach in the classroom will create an atmosphere that will help every student develop the knowledge, skills and attitudes that are needed for success.

How you conduct yourself in our classes will, to a large extent, mirror your conduct in society and your future work site. For example, if you have a tendency to ask questions, challenge the ideas of others in a respectful manner, draw out the best from your colleagues, and encourage both group development and task accomplishment in this class, it is likely you will do the same at work. A high level of student involvement and developing professionalism is expected in the classroom as you work towards your goal.

Required Textbooks and Equipment:

Columbia College Math 102 Workbook

Raines, V. (2010). *Basic Math Review for Nurses.* Philadelphia: F.A. Davis Company

Recommended Readings and Resources:

Students may access these sources from the College and from home.

ProQuest Nursing and Allied Health, Canadian Business and Current Affairs, and Canadian Newsstand

- http://proquest.umi.com/login
  Username: cc-library
  Password: welcome

GALE InfoTrac Custom Journals

- http://infotrac.galegroup.com/itweb/calg145?db=SP00
  Password: cclibrary09

Further Recommended Readings and Resources:

Homework Assignment Due for the First Class:

- **None**

Evaluation - Assessment of Student Performance:

The final grade in the course will be based on the following elements. Wherever possible facilitators will use rubrics to assess your performance and offer feedback.

Title of Assignment/Examination	Due Date	Weight
Assignments	Class 2	30%
Daily Quizzes	Daily	30%
Final Exam	Class 10	40%

Please note that all homework and assignments are due at the beginning of each class.

Grading:

Grades for each component will be added together at the end of the semester. The final total will be translated to the Columbia College's 4.0 grading scale as follows:

Marking and Grading Conversion:

Description	*Letter Grade*	*Grade Points*	*Percentage Scale*	
Excellent	A+	4.0	100	95
	A	4.0	94	90
	A-	3.7	89	85
Good	B+	3.3	84	80
	B	3.0	79	75
	B-	2.7	74	70
Satisfactory	C+	2.3	69	65
	C	2.0	64	60
	C-	1.7	59	55
Poor	D	1.0	54	50
Failure	F	0.0	49	0

The minimal passing grade is "C".

Submission and Completion of Assignments:

You are expected to submit assignments by the due date. Any late assignments may be assessed a marking penalty of 5%. If you are unable to submit an assignment on the due date, you must request an extension **before** the due date by filling out an *Application for Assignment Extension form (SSPP-F012)* that is to be submitted to the Department Chair for approval. This form is available on Columbia's website, Bldg. 802 – Main Office and from Department Chairs.

Requesting an Examination Deferral:

If you are requesting an exam to be deferred, you must submit an Application for *Deferred Examinations form (SSPP-F012)* to the Department Chair **within 48 hours of the missed examination date and time**. Applications for deferred examinations will only be considered due to medical or personal emergency. A medical certificate or other appropriate documentation may be required. This form is available on Columbia's website, Bldg. 802-Main Office and from Department Chairs.

Attendance Requirements:

Columbia College believes that student are committed to their program and learning experiences. However, it is understood that there are times when students may be absent. Any absences can be viewed as a potentially serious disruption of the learning process and necessary achievement of the learning objectives. Being late is also considered unacceptable as it interferes with the learning opportunities of others. Unavoidable absences or lateness must be reported to the course facilitator in advance. Please refer to Columbia College's *Attendance Policy and Regulations (ADM-P151)* for detailed information on Attendance Requirements.

Academic Integrity:

Academic dishonesty is a serious offence and can result in suspension or expulsion from Columbia College.

There is no tolerance for academic dishonesty and any student caught plagiarizing is subject to serious sanctions as outlined in the *Student Code of Conduct Policy (ADM-P229)*. Students are encouraged to familiarize themselves with this policy and avoid any behavior that could possibly be seen as cheating, plagiarizing, misrepresenting, or putting into question the integrity of one's academic work.

Student Conduct:

It is the responsibility of each student to uphold the expectations and responsibilities outlined in the *Student Code of Conduct Policy (ADM-P229)* and any additional requirements established by your program.

Generally, each student will:

- be respectful and courteous toward others;
- demonstrate appropriate and supportive communication skills, and coach, assist, advise and otherwise support other students in their studies;
- manage any personal stress and conflict in a positive and resourceful manner, and assist others to do the same;
- be dressed in a manner appropriate for their workplace or learning environment, as established by the program;
- conduct themselves in a professional manner with regard to their communication with others and their behavior in class;
- conduct themselves with academic integrity in all of their learning activities, tests, exams, and assignments
- keep up with day-to-day classroom and course expectations.

Important Dates:

Description	*Date*
Last to add/drop courses	5 school operating days from the start of the semester OR before the third scheduled class, whichever is greater
Last day to withdraw without academic penalty	50% or less of the semester has been completed
Final Examination	A final exam may take many formats. If a final exam is scheduled, it will be taken in an assigned room under the supervision of a Test Proctor. Students must be on time as they will not be permitted to enter once the exam has started. Exam dates, times, and location are posted by the main office Bldg. 802 and in the hallway in Bldg. 805. It is the student's responsibility to check this exam posting.

Appeals:

Please refer to the *Student Appeal Policy (ADM-P177)*.

Students with Temporary or Permanent Disabilities:

Students with temporary or permanent disabilities may apply for accommodations. To be considered for an accommodation, a student must register with Columbia College's Disability Services by making an appointment with a Disability Services Advisor – Main Office – Bldg. 802 or emailing disabililtyservices@columbia.ab.ca. The Department Chair or facilitator is not able to provide you with any accommodations without you taking this step. Please refer to Columbia College's website to review *the Accommodation Policy and Handbook (ADM-P188)*.

Student Support:

Students should be aware that Life Coaching, Career and Disability Services, and Student Support Services (i.e. tutoring, academic strategists, etc.) are provided by Columbia College. Inquire how to request these services at the Main Office in building 802. It is the student's responsibility to discuss their specific learning needs with the appropriate service provider.

Class Schedule/Overview:

Please note that this schedule is subject to change. Any changes or cancellations will be emailed to you. It is your responsibility to check the email address you have given to the school on a daily basis for any messages from the Department Chair/designate, facilitator or College Administration. It is the student's responsibility to be familiar with the information contained in the Course Outline and to clarify any areas of concern with the facilitator.

Class Session	Topics	Pre-Class Readings
1	Organizing Data: Finding different ways data is displayed	Be ready to discuss syllabus.
2	Graphing and Coordinates Understanding coordinate systems Using spreadsheets to create graphs	Graphing & Design Assignment Due Homework as assigned by facilitator
3	Linear and Nonlinear graphs	Homework as assigned by facilitator
4	Systems of Equations	Homework as assigned by facilitator
5	Range, Mean, Median and Mode and understanding their uses Variance, Standard Deviation – understanding what they tell	Homework as assigned by facilitator
6	Measurement Conversion	Homework as assigned by facilitator
7	Geometry including Areas of squares, rectangles, triangles and circles Units of measurement involved Volume and Capacity Measures of 3-dimensional solids including units of measurement involved.	Homework as assigned by facilitator
8	Finance including Spreadsheets	Homework as assigned by facilitator
9	Course review – prepare questions that need clarifying Tips on doing math exams	Homework as assigned by facilitator
10	*.Final Exam – location to be announced.*	

Assignment

Graphing and Design – 30 marks

A. Examining Data. This section of the project involves the review of an article that uses one or more graphs to present information.
Choose an article from one of the articles provided at the end of this unit. Read the article carefully and complete the following exercises.

1. Briefly describe the main points of the article, and identify what type(s) of graphs were used. (5 marks)
2. Take a look at one of the graphs found in the article and explain how the graph supports the main points discussed in question 1. (5 marks)
3. In your opinion, was the use of the graph in this situation effective? Why or why not? (5 marks)

B. Choose an article that includes numerical data or a data table. Read the article and complete the following:

1. Briefly describe the main points of the article. (3 Marks)
2. How does the data found in the article support the main points? (4 Marks)
3. Create a graph for the given data found in the article. (5 Marks)
4. Explain why you used the type of graph for question 3. (3 Marks)

Approval:

Program Chair's Signature	May 21, 2014 Date
Vice-President's, Academic Signature	May 21, 2014 Date
Registrar's Signature	May 21, 2014 Date