Columbia College
Intermediate Mathematics for Professionals (MAT0102)
Lecture 1
Course Outline
Semester Dates: May 23, 2017 to June 24, 2017

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: : Wade Breakey	Email: wadeb@columbia.ab.ca
Class Time: 5:30 pm to 9:30 pm (Tues/Thurs.)	Room: 4-159
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. (5 weeks, 40 hours)

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

GALE InfoTrac Custom Journals
   o   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	Daily	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
Excellent	A	4.0	94	90
Excellent	A-	3.7	89	85
Good	B+	3.3	84	80
Good	B	3.0	79	75
Good	B-	2.7	74	70
Satisfactory	C+	2.3	69	65
Satisfactory	C	2.0	64	60
Satisfactory	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% per each class late

Requesting an Examination Deferral:

If you are not able to do an exam on the scheduled date, you may request that the exam be deferred to another date. The fee for a Deferred Exam is $50 plus facilitations costs for a minimum cost of $100.00.

Attendance Requirements:

Please come to each class on time and stay to the end of the class.

Academic Integrity:

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

Student Conduct:

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 schedules are available in each building on a bulletin board, as well as online at www.columbia.ab.ca/exams. 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 accessibilityservices@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:

Tutoring is available as a fee-based service.

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	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- 3 hours – location to be announced.	

Columbia College
In-Class Learning Activity Rubric
Last Revised: May 7, 2014

Student's Name	Course Code	Date	Facilitator/Evaluator's Name

Area	A 10-9	B 8-7	C-D 6-5	F 4-0	Score
Contribution to Group Goals and Tasks	• Regularly provides useful ideas to group. • Contributes consistently and actively to group tasks and makes a strong effort to achieve goals. • Fully accepts and fulfills individual role within group.	• Often provides useful ideas to group. • Contributes actively to group tasks with occasional prompting. • Usually accepts and fulfills individual role within group.	• Sometimes provides useful ideas to group. • Does what is required with occasional prompting.	• Rarely provides useful ideas to group. • Works toward goals only when prompted.	
Quality of Work Output	• Demonstrates superior quality work. • Does not need to be prompted to get work done on time.	• Demonstrates good quality work. • May need occasional prompting to get the work done on time, but does not hold up group's progress.	• Work sometimes needs monitoring or re-doing. • Usually needs prompting to get work done on time and tends to hold up group progress.	• Work usually needs monitoring or re-doing. • Group's progress is held up by poor personal management. • Always needs prompting to get the work done.	
Working with Group Members	• Listens to others and speaks a significant amount as appropriate. • Never argues with group members. • Always helps all group members to arrive at a fair and logical decision.	• Listens but sometimes talks too much or dominates the discussion. • Rarely argues with group members. • Usually considers the views of all group members.	• Usually dominating the discussion, rarely allows others to speak. • Sometimes argues with group members. • Often sides with specific individuals instead of considering views of all group members.	• Is always talking, never allows anyone else to speak. • Usually argues with group members. • Usually wants to have things his/her own way.	

Area	5	4	3	2-0	Score
Overall Attitude / Disposition	• Never openly critical of learning activity, group tasks, or group members. • Always demonstrates positive attitude towards group goals and tasks.	• Rarely openly critical of learning activity, group tasks or group members; • Generally demonstrates positive attitude towards group goals and tasks.	• Sometimes openly critical of learning activity, group tasks or group members. • Demonstrates occasional negative attitude towards group goals and tasks.	• Often openly critical of learning activity, group tasks or group members. • Usually demonstrates negative attitude towards group goals and tasks.	
Readiness to Engage in Group Activity	• Always ready to begin tasks without the need for prompting. • Always comes prepared with ideas and materials needed to get the work started on time.	• Almost always ready to begin tasks and rarely needs prompting. • Almost always comes prepared with ideas and materials to get the work started on time.	• Often needs prompting to begin tasks and do the required work. • Usually comes prepared with ideas and materials to get the work started on time.	• Always needs prompting to begin tasks and do the required work. • Always or often relies on others to do the work. • Does not usually come prepared with ideas and materials to get the work started on time.	

Plagiarism: A "0" grade will be given to a paper where significant sections of the paper were copied from other, unattributed sources.

Total Score out of 40:

Facilitator/Evaluator's Comments:

Student's Name	Course Code	Date	Facilitator/Evaluator's Name

Pts	Preparation for Class	Quality of Participation	Involvement in Process	Frequency of Participation
5	• Demonstrates completion of readings or assignment and awareness of all key concepts contained in readings or assignment on a daily basis.	• Comments significantly add to the learning process; consistently demonstrates high order thinking, analysis, synthesis, and evaluation; demonstrates ability to appropriately apply concepts to real-life situations; always participates constructively in discussion on a daily basis	• Comments build on contribution of others, enabling group to integrate experiences and insights (linking theory and real-life experiences); supportive and encouraging to other class members; comments are focused and concise.	• Contributes actively and consistently to group process on a daily basis.
4	• Demonstrates completion of readings or assignment and awareness of most of the key concepts on a daily basis.	• Comments contribute to learning process; shows evidence of ability to apply concepts to real-life situations; mostly demonstrates higher order thinking skills; generally participates constructively in discussion on a daily basis.	• Comments do not always build on the contribution of others; most times shows support of other classmates.	• Contributes actively and somewhat inconsistently to group process on a daily basis.
3	• Demonstrates awareness of some key concepts or ideas contained in readings or assignment on a daily basis.	• Comments show evidence of awareness and understanding of concepts covered in the reading or assignment; inconsistently demonstrates high-order thinking; inconsistently participates in a constructive manner.	• Speaks up when asked with comments that add to understanding; inconsistently shows support of other classmates; comments tend to be at times off focus.	• Contributes inconsistently to group process.
2	• Inconsistently demonstrates awareness of concepts or ideas contained in readings or assignment; inconsistent daily preparation.	• Comments show background knowledge of basic concepts covered in the readings or assignment; little demonstration of higher-order thinking; generally, participation is not constructive	• Contributes little to group understanding; little evidence of being encouraging to others.	• Does not contribute to group except when asked.
1	• Demonstrates little or no awareness of key concepts	• Comments show no evidence of awareness of concepts covered in	• Does not contribute to the group process.	• Does not contribute.

		or ideas contained in readings or assignment; little to no daily preparation.	the readings or assignment; shows no evidence of higher-order thinking; shows general lack of interest.		

Total Score out of 20:

Facilitator's Evaluator's Comments:

Professional Code of Conduct

Our success in the workplace is based on how proficient we are at utilizing our knowledge and skills and how effectively we conduct ourselves each day as professionals in satisfying the needs of our internal and external customers, and the goals of our organization. The following list describes many professional behaviours that can help us become more effective. The more skilled we become at applying each of these behaviours, regardless of our position in the organization, the more successful we will become.

1.0   Professional Approach and Ethical Behaviour
- 1.1.   As a professional, demonstrates pride in their work and is honest, moral, ethical, honorable, trustworthy, and acts with integrity
- 1.2.   Is pleasant, polite, punctual, positive, friendly, smiles, and asks how they may help others
- 1.3.   Is reliable, responsible, accountable, loyal, engaged, and enthusiastic about their work
- 1.4.   Is compassionate, caring, and finds meaning and fulfillment in their work
- 1.5.   Tries to be constructive, pro-active, and acts as a protagonist
- 1.6.   Contributes to a safe, secure, and environmentally-friendly workplace and world
- 1.7.   Views adverse experiences as learning opportunities and recovers quickly from such experiences
- 1.8.   Keeps personal bias out of the workplace, does not use profanity, and respects cultural differences
- 1.9.   Dresses appropriately for the workplace in a neat, clean, and well-groomed manner
- 1.10.   Contributes to the organization via volunteering, coaching, and mentoring others
- 1.11.   Is active in their professional association (where appropriate)

2.   Interpersonal Relations and Teamwork
- 2.1.   Treats all individuals in an equal, fair, and just manner (does not label, or discriminate against others)
- 2.2.   Is a good role model and synergistic team member who is personable, sociable, cooperative, collaborative, has a sense of humor, and is well mannered
- 2.3.   Is considerate and sensitive to others needs and uses tact and diplomacy when required
- 2.4.   Is respectful, courteous, and sincere (does not belittle, intimidate, or insult others)
- 2.5.   Views each client, patient, student, customer, and coworker as a valued customer whose needs must be satisfied before they or their organization can succeed
- 2.6.   Is available, approachable, and may develop close personal relations (avoids romantic situations)
- 2.7.   Offers support, assistance, is flexible, and helps build a positively connected team and organization
- 2.8.   Makes allowances for others mistakes by showing empathy, understanding, and forgiveness
- 2.9.   Is open to constructive criticism, and takes responsibility for one's errors by apologizing, and correcting them
- 2.10.   Avoids conflicts of interest and respects others' workspace and privacy (e.g. FOIP)
- 2.11.   Seeks help from others and offers help to others to become more efficient and effective

3.   Self-Concept and Confidence
- 3.1.   Projects a positive self-concept and feels internally confident, yet does not dominate interactions
- 3.2.   Functions well in ambiguous situations
- 3.3.   May assume responsibility and leadership when required yet remains humble and gracious at all times
- 3.4.   Demonstrates self-efficiency by following through on commitments in order to achieve outcomes
- 3.5.   Considers themselves equal to others and demonstrates such in their interactions

4.   Communication
- 4.1.   Demonstrates effective listening, speaking, and writing skills
- 4.2.   Helps to keep team members informed of changes in the department and/or organization
- 4.3.   Develops more effective ways to improve verbal and non-verbal communication (e.g. tone of voice)
- 4.4.   Respects others privacy and confidentiality (does not engage in gossip)
- 4.5.   Maintains emotional control and encourages others to do the same
- 4.6.   Deals with difficult situations and sensitive issues in a professional manner
- 4.7.   Avoids engaging in disagreements and arguments in public. Seeks assistance when necessary.
- 4.8.   Follows the organization's technology use policy

5.   Life-Long Learning and Professional Development
- 5.1.   Continues to increase their knowledge and skills to become more competent (e.g. credit courses, workshops, seminars, conferences, professional books, journals)
- 5.2.   Shares newly developed approaches based on leading edge research
- 5.3.   Monitors changes and makes or recommends needed adjustments
- 5.4.   Keeps informed about changes affecting their profession, department, organization, and industry
- 5.5.   Acknowledges when they do not know something and seeks to increase their competence

6. **Problem Solving/Decision Making**
   6.1. Either individually or within a team, identifies work-related and customer-based problems/challenges
   6.2. Helps others to view problems and concerns as challenges and even opportunities
   6.3. Seeks input from those affected by work-related or customer-based problems
   6.4. Is more effective when they actually identify the problem as opposed to a symptom
   6.5. Assesses and analyzes problems by using such techniques as brainstorming, nominal group technique, Delphi technique, reframing, and lateral thinking
   6.6. Objectively determines the most efficient and effective solution to each problem/challenge
   6.7. Tries to make fair and just decisions that contribute to the common good
   6.8. Effectively implements solutions in a timely manner
   6.9. Monitors and evaluates solutions and takes further corrective action as needed

7. **Creative Thinking and Innovation**
   7.1. Is more creative by asking 'why' and more innovative by asking 'what if'
   7.2. Takes calculated risks and is willing to recommend and/or initiate change

8. **Negotiating or Conflict Resolution**
   8.1. Identifies customer or employee issues when a conflict first arises by listening to and determining their wants, needs, and concerns.
   8.2. Effectively uses conflict resolution and problem solving techniques
   8.3. Effectively negotiates and helps others resolve issues in conflict by focusing on facts and not emotions
   8.4. Turns to qualified professionals to resolve situations involving harassment, bullying, or violence

9. **Organizational and Time Management Skills**
   9.1. Practices one-touch policy by taking immediate action to solve simpler challenges (e.g. does not put paper, emails, etc. in piles) and develops a plan to take action on more complex challenges
   9.2. Uses electronic calendar to plan regularly occurring daily, monthly, and yearly meetings and activities
   9.3. Maintains an organized office, desk, files, documents, and working environment
   9.4. Is prepared in advance for appointments and meetings (meeting etiquette)
   9.5. Sets SMART individual and/or team goals by completing assignments, reports, etc. in an accurate and timely manner (does not procrastinate)
   9.6. Lets others know if they are unable to meet a commitment, must change a priority, or needs help

10. **Stress Management**
    10.1. Maintains composure under pressure and draws on their internal strength to succeed during difficult times
    10.2. Effectively deals with negative situations in a positive manner
    10.3. Maintains a balance between personal and professional life
    10.4. Maintains a positive, focused, and more productive environment by reducing negative stress

11. **Leadership Style**
    11.1. Effectively contributes to the organization's vision, mission, directions, goals, and Code of Conduct
    11.2. Encourages others to adopt a positive leadership style (does not use threats or punishment)
    11.3. Stimulates interest and enthusiasm on the part of others and contributes to positive employee morale
    11.4. Coaches, advises, mentors, and counsels others where appropriate
    11.5. Motivates others to achieve their intrinsic and extrinsic rewards through recognition, praise, and where possible through empowerment
    11.6. Brings out the best in others which helps them channel their energy and experience greater satisfaction
    11.7. Seeks new opportunities or approaches that will increase customer satisfaction, respect, and loyalty
    11.8. Networks with others outside the organization and builds relationships that will benefit the organization
    11.9. Bases leadership practice on collective vision, beliefs, as well as professional attitude and values
    11.10. Builds a sense of shared values that bind others to a common cause and/or direction
    11.11. Encourages and promotes a culture based on trust and respect

12. **Performance**
    12.1. Continually seeks new ways to more efficiently and effectively perform their duties and responsibilities which contributes to the financial success of the organization, and as a result, also increases job security
    12.2. Is committed to continuous improvement in the quality of goods/services their customer/patient/client/student experience
    12.3. Contributes to the long-term growth and success of the organization by providing such outstanding customer service that current customers refer new customers on an ongoing basis
    12.4. Firmly believes that only when each internal and external customers succeed, will they succeed