# Mathematics 073-S01
# Advanced Mathematics 2
# Winter 2018

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Timetable:

| Time　　Day | Monday | Tuesday | Wednesday | Thursday | Friday |
|---|---|---|---|---|---|
| 4:30 – 5:00 pm | Office Hours | | | Office Hours | |
| 5:00 – 5:20 pm | Office Hours | Office Hours | Office Hours | Office Hours | |
| 5:30 – 7:50 pm | Math 072/073 S01 E346 | Math 072/073 S02 E346 | Math 072/073 S01 E346 | Math 072/073 S02 E346 | |

1.　　Important Dates:

| | |
|---|---|
| Jan 8 | First day of classes |
| Jan 22 | Fee Deadline (Winter '18) |
| Feb 12 | Family Day – College closed |
| Feb 13-16 | Reading Break |
| Feb 16 | College Conversations Day – College closed |
| Mar 14 | Withdraw Deadline |
| Mar 30 | Good Friday – College closed |
| Apr 2 | Easter Monday – College closed |
| Apr 12 | Last day of instruction |
| Apr 16-24 | Final Exam Period (No exam on Sunday, Apr. 22) |

2.　　Intended Learning Outcomes (4 credits)

This course is the second half of Math 11 and is an excellent refresher for those who wish to upgrade before Math 12 or Pre-Calculus.

Topics include: polynomial and polynomial function review, rational and radical expressions and equations, quadratic equations and functions, right triangle trigonometry, trigonometric functions of any angle and the Sine and Cosine Laws.

The sections covered in the textbook are:

| | | |
|---|---|---|
| Unit 1: | Ch 4 Polynomials & Polynomial Functions Review | 4.1 – 4.8 |
| Unit 2: | Ch 5 Rational Expressions, Equations & Functions | 5.1 – 5.8 (Include 1.3b, 3.4b & 5.6c) |
| Unit 3: | Ch 6 Radical Expressions, Equations & Functions | 6.1 – 6.8 a-e (Review R.7) |
| Unit 4: | Ch 7 Quadratic Equations & Functions | 7.1 – 7.7a |
| Unit 5: | Trigonometry (*not in Textbook*) | See me for an electronic copy of Trig. |

For a detailed synopsis of material covered in the course, refer to Course Content section below.

See Camosun College calendar for more information:
http://camosun.ca/learn/calendar/current/web/math.html

3.      Building for Success
The course completion time will vary for each student. Factors that may influence completion time may include the student's entry-level math skills, motivation, learning rate, time devoted to studying and attendance. It takes 2 – 4 hours to read through one section and do both the margin exercises and sufficient exercises in the exercise set to feel comfortable with the material. There are 30 sections in this course, many with subsections; this means that you have between **70 – 140 hours of work** ahead of you not including study time for tests and the final exam! If you work 5 days a week on this course, then you need to put in 2 – 4 hours a day to finish the course in one term. There is lots of help available; you can ask me questions during class or during office times, or you can get help from the math tutors in the Math Labs.

4.      Required Materials
  i.    *Intermediate Algebra*, 12th Edition, Marvin Bittinger
       Textbook comes packaged with the Student's Solution Manual, Algebra Review Study Card and *MyMathLab (pirated electronic copies of MyMathLab or the textbook are NOT allowed)*.
  ii.   The only calculator allowed on tests and the final exam is the **Sharp EL-531** scientific calculator.

5.      Math Labs
Ewing 342 & 224 (LANS) and Tec142 (INT): These drop-in centres are available for you to work on math homework and to seek **free** help from the Instructional Assistant. See the hours posted on the math lab doors or go to http://camosun.ca/learn/programs/math/labs.html.
Study Tips: It is recommended that approximately 3-6 hours per week be spent studying and completing homework for this course outside of class time. Find a study buddy to discuss math problems and **use the math labs**.

6.      Student Assessment, Grading and Policies
Assessment and Evaluation: There are 5 tests and the final exam. The tentative dates and topics are on the pacing schedule.
If you get less than 65% on a test you must complete a rewrite (to a maximum of 2 rewrites). There are NO rewrites for the final exam. If you get more than 65% on a unit test, you have the option of rewriting it once. The highest test mark for each section will count towards your final term mark. To re-register for the course for one extra term, you must demonstrate to the instructor that you have completed at least **75% of the work** or have attend at least **75% of the classes.**

You may write the tests when you feel you are ready. You must <u>demonstrate to the instructor</u> that you have completed and understand the assigned homework and that you have done the Summary & Review and the textbook Chapter Test which accompanies each unit. You are also encouraged to attempt the quizzes using MyMathLab. *You must get written permission of your instructor to write each test and the comprehensive final exam*.

Tests and the final exam are to be written in **Math Lab (E342)** during math lab hours which are posted on the math lab door. Please be aware that lab hours may change during the term due to staff availability. Allow one and a half hours to write the tests and 3 hours to write the final exam. **You are not allowed to commence a test 1-hour before the close of the Math Lab**. If you want to complete the course in one term, you should plan to write a test every 2-3 weeks. Again, there is **no rewrite for the final exam**. If the average of your term mark and your exam mark is not high enough to proceed into your chosen program, then you need to repeat Math 073. The final exam has non-calculator and calculator-permitted sections.

Grade Calculation: The final grade will be calculated according to the following breakdown:

Tests..................................... 50%
Final Exam............................. 50%

Grade Scale:

| Percent Range | 0-49 | 50-59 | 60-64 | 65-69 | 70-72 | 73-76 | 77-79 | 80-84 | 85-89 | 90-100 |
|---|---|---|---|---|---|---|---|---|---|---|
| Letter Grade | **F** | **D** | **C** | **C+** | **B-** | **B** | **B+** | **A-** | **A** | **A+** |

For information on Camosun College's grading policy, see the webpage:
http://camosun.ca/about/policies/education-academic/e-1-programming-and-instruction/e-1.5.pdf

LEARNING SUPPORT AND SERVICES FOR STUDENTS
There are a variety of services available for students to assist them throughout their learning. This information is available in the College Calendar, Registrar's Office or the College web site at http://camosun.ca/

STUDENT CONDUCT POLICY
There is a Student Conduct Policy. It is the student's responsibility to become familiar with the content of this policy. The policy is available in each School Administration Office, Registration, and on the College web site in the Policy Section.
http://camosun.ca/about/policies/education-academic/e-2-student-services-and-support/e-2.5.pdf

ACADEMIC PROGRESS POLICY
The College has an academic progress policy geared mainly toward "at risk" students, the stated intention for which is to improve a student's likelihood of success. To view the policy, see the webpage http://camosun.ca/about/policies/education-academic/e-1-programming-and-instruction/e-1.1.pdf

7.    Course Content

| Homework for Unit 1 (Chapter 4) | | | |
|---|---|---|---|
| **Unit 1** | **Section** | **Margin Exercises** | **Practice** |
| 4.1 | Introduction to Polynomials and Polynomial Functions | Review | 1, 5, 7, 21, 25, 29, 35, 41, 51, 55, 67, 73, 79 |
| 4.2 | Multiplication of Polynomials | Review | 1, 5, 11, 13, 15, 21, 23, 27, 33, 41, 51, 55, 65, 71, 77, 81, 85, 91 |
| 4.3 | Introduction to Factoring | Review | 1, 5, 9, 11, 17, 21, 25, 29, 33, 37, 43, 47, 49 |
| 4.4 | Factoring Trinomials: $x^2 + bx + c$ | Review | 1, 5, 7, 11, 13, 19, 21, 23, 25, 27, 29, 33 |
| 4.5 | Factoring Trinomials: $ax^2 + bx + c, a \neq 1$ | Review | 1, 5, 9, 19, 25, 29, 33, 41, 45, 51 |
| 4.6 | Special Factoring | Review | 1, 5, 11, 17, 25, 33, 35, 39, 43, 47, 53, 61, 63, 69, 71, 75, 79, 89, 95 |
| 4.7 | Factoring: A General Strategy | Review | 1, 3, 5, 7, 11, 17, 19, 23, 25, 29, 31, 35, 43, 49, 51 |
| 4.8 | Applications of Polynomial Equations & Functions | All | 1, 5, 9, 13, 17, 21, 29, 33, 37, 39, 41, 47, 51, 53, 55, 63, 65, 69, 71, 73,75, 77 |
| Unit 1 Test: Chap 4 | | | |

| Homework for Unit 2 (Chapter 5) | | | |
|---|---|---|---|
| **Unit 2** | **Section** | **Margin Exercises** | **Practice** |
| 5.1 | Rational Expressions and Functions | All | 1, 3, 5, 7, 13, 15, 19, 21, 25, 27, 29, 31, 35, 37, 41, 45, 49, 51, 55, 57 |
| 5.2 | LCMs, LCDs, Addition and Subtraction | All | 3, 11, 13, 19, 23, 27, 31, 33, 35, 39, 45, 49, 55, 63, 67, 71 |
| 5.3 | Division of Polynomials | All | 1, 5, 9, 11, 15, 19, 21, 23, 29, 31, 33 |
| 5.4 | Complex Rational Expressions | All | 1, 5, 9, 13, 17, 19, 21, 23, 27, 29, 31 |
| 5.5 | Solving Rational Equations | All | 1, 5, 9, 11, 15, 19, 23, 25, 27, 33, 35, 41, 43 |
| 5.6c only | Applications and Proportions | 5, 6 | 25 – 33 Odds |
| 5.7 | Formulas and Applications | All | 1 – 23 Odds |
| 5.8 | Variation and Applications | All | 1, 5, 7, 9, 15, 17, 21, 25, 29, 31, 39, 41 |
| Unit 2 Test: Chap 5 | | | |

| Homework for Unit 3 (Chapter 6) | | | |
|---|---|---|---|
| **Unit 3** | **Section** | **Margin Exercises** | **Practice** |
| 6.1 | Radical Expressions and Functions | All | 7, 9, 11, 13, 15, 19, 23, 25, 27, 29, 35, 43, 45, 51, 53, 61, 63, 65, 67, 69, 71 |
| 6.2 | Rational Numbers as Exponents | All | 3, 7,15, 21, 29, 33, 39, 41, 43, 45, 49, 51, 53, 55, 59, 63, 69, 71, 73, 75, 79 |
| 6.3 | Simplifying Radical Expressions | All | 1,5, 9, 13, 17, 21, 25, 29, 33, 39, 41, 49, 53, 55, 59, 67, 71, 75,79, 83, 87, 89 |

| 6.4 | Addition, Subtraction, and More Multiplication | All | 1, 5, 9, 13, 17, 19, 23, 33, 37, 43, 47, 51, 57, 61, 67, 71, 73 |
|---|---|---|---|
| 6.5 | More on Division of Radical Expressions | All | 1, 5, 9, 13, 17, 21, 25, 29, 31, 34 |
| 6.6 | Solving Radical Equations | All | 1, 5, 9, 17, 19, 21, 27, 29, 33, 37, 41, 47, 53, 55, 57 |
| 6.7 | Applications Involving Powers and Roots | All | 1, 5, 7, 11, 13, 17, 19, 21, 23, 29 |
| 6.8 a-e (omit f) | The Complex Numbers | 1 - 30 | 1, 5, 13, 17, 19, 27, 31, 35, 39, 47, 71, 77, 81, 87 |
| Unit 3 Test: Chap 6 | | | |

## Homework for Unit 4 (Chapter 7)

| Unit 4 | Section | Margin Exercises | Practice |
|---|---|---|---|
| 7.1 | The Basics of Solving Quadratic Equations | All | 1, 5, 9, 13, 17, 21, 25, 33, 39, 43, 47, 49, 51, 55, 57 |
| 7.2 | The Quadratic Formula | All | 1, 3, 11, 17, 21, 29, 33, 35, 41 |
| 7.3 | Applications Involving Quadratic Equations | All | 3, 5, 9, 11, 13, 19, 21, 25, 31, 35, 37, 39, 41, 43, 47 |
| 7.4 | More on Quadratic Equations | All | 1, 5, 9, 15, 17, 21, 23, 29, 31, 33, 35, 37, 39, 43, 47, 49, 55 |
| 7.5 | Graphing $f(x) = a(x - h)^2 + k$ | All | 1, 5, 9, 13, 17, 19, 21, 23 |
| 7.6 | Graphing $f(x) = ax^2 + bx + c$ | All | 1, 5, 7, 9, 15, 19, 21 |
| 7.7va | Mathematical Modeling with Quadratic Functions | 1 | 1 – 17 Odds |
| Unit 4 Test: Chap 7 | | | |

## Homework for Unit 5 (Trigonometry)

| Unit 5 | Section | Margin Exercises | Practice |
|---|---|---|---|
| T6.1 | Trig Functions of Acute Angles | n/a | 1-29 odd, 37, 49, 55, 61, 69, 71, 79-91 odd, 97 |
| T6.2 | Application of Right Triangles | n/a | 1, 3, 9, 13, 15, 17, 21, 25, 29, 31, 35 |
| T6.3 | Trig Functions of any Angle | n/a | 1,5,9,13,15,19,23,25,29,39, 41,45,47,51,61,75, 83, 87, 93, 97,105 |
| T8.1 | Law of Sines | n/a | 1, 3, 5, 9, 13, 15, 17, 21, 25, 27 |
| T8.2 | Law of Cosines | n/a | 1, 3, 7, 9, 13, 17, 19, 21, 25, 31 |
| Unit 5 Test: Trig | | | |
| Final Exam Preparation | | | |

8.     Pacing Schedule (suggested)

| Week | Month | Monday | Wednesday | Notes |
|---|---|---|---|---|
| 1 | Jan | *8*      4.1 – 4.2 | *10*      4.2 - 4.4 | Students continuing from receiving credit for Math 072 are encouraged to do a quick review of Chapter 4 and commence with 4.8 and adjust the schedule accordingly. |
| 2 | Jan | *15*      4.4 - 4.6 | *17*      4.7 - 4.8 | |
| 3 | Jan | *22*      5.1 - 5.2 | *24*      5.3 - 5.4 | |
| 4 | Jan | *29*      5.5 | *31*      5.6 - 5.8 | |
| 5 | Feb | *5*      6.1 - 6.2 | *7*      6.2 - 6.3 | |
| 6 | Feb | *12* **Family Day**      6.3 – 6.4 | *14* **Reading Break**      6.4 - 6.5 | |
| 7 | Feb | *19*      6.6 | *21*      6.6 - 6.7 | |
| 8 | Feb | *26*      6.7 | *28*      6.8 | |
| 9 | Mar | *5*      7.1 - 7.2 | *7*      7.3 | |
| 10 | Mar | *12*      7.3, 7.4 | *14*      7.4 | |
| 11 | Mar | *19*      7.5 | *21*      7.5 - 7.6 | |
| 12 | Mar | *26*      7.6 | *28*      7.7a | |
| 13 | Apr | *2* **Easter Monday**      T6.1 - T6.2 | *5*      T6.3 | |
| 14 | Apr | *10*      T8.1 - T8.2 | *12*      Review | |
| 15 | Apr | *16-21, 23-24*      Final Exam Period | | |

**\*Accelerated course completion (7 weeks) requires doubling of workload.**

9. Class Protocols

   a. Sign-in/Check-in with the instructor.
   b. Bring your textbook, calculator and work materials to every class.
   c. Work quietly. I encourage you to help each other but please keep the noise level down and keep cell phones on vibrate mode. If you would like to work with a partner or in a group, please feel free to use the math lab. If you would like to take a break from math (and this is totally understandable) please chat outside the classroom.
   d. If you bring snacks to class, please be respectful of others and tidy up afterwards. Let me know if you have any allergies. Thanks.
   e. If you need help and I'm with another student, please put your name on the board so I know you're waiting. If others are waiting, I may have to limit the time I spend with you. i.e.; 2 questions at a time.
   f. When doing the exercises, label each question clearly, write out the question and **show your work**. This makes it easy to review for the test and to get help if you don't understand.
   g. If you have trouble with an exercise, highlight the question and make a note in your margin about what you don't understand. When you ask for help in class, bring the question and your work for the instructor to see. Be organized!
   h. When requesting a Permission Slip to write a test or your final exam, you must demonstrate competency to the instructor (sufficient homework, reviews and chapter checks completed).
   i. Tests and the final exam are to be written in the **Math Lab E342** (exclusively).

10. Ensuring Success

   a. Come to class every day. If you don't attend class, it's easy to fall behind and much tougher to catch up as you have to relearn the material.
   b. Do the suggested exercises from your course outline. Work through the problems thoughtfully, not just to get them done. Think about what the instruction means, what a similar question might look like on the test and what are some of the pitfalls that you need to avoid.
   c. Try to find time to do at least a bit of math at least 5 days a week. On your timetable, schedule time each day for your math homework; it is really important to establish a routine. You can't put your math course on the back burner and hope to cram it in at the end.
   d. **It is imperative that you notify the instructor** asap if you anticipate being absent for any period of time due to illness or other unforeseen events.
   e. If you don't understand something seek help right away from your instructor or from the Instructional Assistants in the Math Labs in E224 and E342.
      Hours:  **E342   4:00pm – 8:00pm**
              **E224   9:00am – 4:30pm**
   f. Keep working, stay positive and do the best you can, given all the other demands in your life.

Pearson's MyMathLab
Student Registration Instructions

To register for MATH 072_073:
1. Go to www.pearson.com/mylab .
2. Under Register, select **Student**.
3. Confirm you have the information needed, then select **OK! Register now**.
4. Enter your instructor's course ID: cuizon76543, and **Continue**.
5. Enter your existing Pearson account **username** and **password** to **Sign In**.
You have an account if you have used a Pearson product, for example: MyMathLab, MyITLab, MyPsychLab, MySpanishLab or Mastering, such as MasteringBiology.
If you don't have an account, select **Create** and complete the required fields.
6. Select an access option.
   ➢ Use the access code that came with your textbook or that you purchased separately from the bookstore.
   ➢ Buy access using a credit card or PayPal account.
   ➢ If available, get 14 days temporary access. (The link is near the bottom of the screen.)
7. From the confirmation page, select **Go To My Courses**.
8. On the My Courses page, select the course tile MATH 072_073 to start your work.

To sign in later:
1. Go to www.pearson.com/mylab .
2. Select **Sign In**.
3. Enter your Pearson account **username** and **password**, and **Sign In**.
4. Select the course tile MATH 072_073 to start your work.

To upgrade temporary access to full access:
1. Go to www.pearson.com/mylab .
2. Select **Sign In**.
3. Enter your Pearson account **username** and **password**, and **Sign In**.
4. Select **Upgrade access** for MATH 072_073.
5. Enter an access code or purchase access with a credit card or PayPal account.
For a registration overview, go to http://www.pearsonmylabandmastering.com/students/get-registered. Scroll down to **Need a little help?** and select a video.