

CRN 30128

Summer 2015

Course Syllabus for MTB 2321 – Technical Mathematics

Course Description: *From the Valencia Catalog:*

Fundamental arithmetic, geometry, and algebra operations including algebraic expressions, exponents, factoring and linear and curvilinear equations, graphs of functions and equations, various coordinate systems, solution of right triangles and oblique triangles by means of trigonometric functions; word problems and engineering/surveying/construction applications. Use of scientific calculator 4 credits/ 4 contact hours.

Class Meetings: Building 7 Room 129, 5:30 PM – 9:50 PM, Thursdays evening, 16 weeks.
 Additional information available on IMathAS

Text:

- Optional:** *Elementary Algebra*, 3rd Edition, Schaum's Outlines, Barnett Rich, PhD and P. Schmit, PhD
- Open Source:** Introductory Algebra, Anne Gloag, Andrew Gloag and Melissa Kramer created by CK 12 and assembled by Scottsdale Community College, Geometry Textbook by CK12 and Trigonometry by Michael Corral, Schoolcraft College
- Optional:** "College Mathematics 2009 Update With MyMathLab" by Cheryl Cleaves, Margie Hobbs

Instructor Information:

Name: Sandra Bowling
Office: Building 9, Room 223; Mailbox in 9-140F; Mail Code 4-41
Phone: (407) 582-1302
Email: sbowling6@valenciacollege.edu
Office Hours: Specific hours posted on office door. Appointments may be made at mutually convenient times.
Virtual Hours: Contact me via Blackboard/ Email

Instructional Methods:

We will be using Valencia IMathAS this semester. You will need to go to the website <http://imathas.valenciacollege.edu/index.php>. You will need to create an account. The steps to create the account has been emailed to your Atlas Account. Course ID. 1472, Enrollment Key 30128

Homework assignments will be online assignments using the IMathAS website. It is the students responsibility to complete the homework. Announcements for homework will be posted using IMathAS. Using of IMathAS is necessary to be successful in this course; if you need assistance, please contact me.

Video Lectures / Lessons:

- The Video Lectures/Lessons as shown in folders Class 1 through Class 15 are to be completed prior to the start of class so that the student can complete practice problems covered in that class.
- The Video Lectures /Lessons will be counted as part of your grade.
- The Video Lectures /Lessons contain videos you need to watch in order and respond accordingly. The last question of the video assignments requires you to discuss what the videos covered. You do not have to watch all videos at once but they need to be reviewed prior to class.
- You will need to print out a copy of the Video Worksheet and show completed worksheet to the instructor at the begining of each class for credit.

Practice Problems:

- You may want to print out the Practice Problem Worksheets for each class as we will be working on the worksheets during class as a review for the assigned homework.

For example:

▼ Video Lectures / Lessons for Class 2 - To be reviewed PRIOR to Class 2 Isolate

In the following Video Lectures and Lessons you will review the following topics:

- Unit Conversions
- Geometry

Review the videos prior to class.

Expand Folder and Complete the Video Lecture/ Lesson prior to Class: Typically there are 3 Lessons per class. Video Lecture/Lessons are to be reviewed prior to class.

▶ Basic Arithmetic: Lesson 9 - Units & Conversions - Review Material	Isolate
▶ Basic Arithmetic: Lesson 10 - Geometry I: Perimeter & Area	Isolate
▶ Basic Arithmetic: Lesson 11 - Geometry II: Volume and Triangles	Isolate

▼ Class 2 Isolate

▶ Practice Problems - Print Out and Bring to Class Isolate

Class 2: Lesson Basic Arithmetic Review- Part 2

Learning Objectives: Lesson Basic Arithmetic Review - Part 2

- Percents: BA6- Online HW
- Geometry I: Perimeter: BA10- Online HW
- Geometry I: Area and Volume: BA11- Online HW

Homework Assignment: BA9 thru BA11 HW are located in Basic Arithmetic Review folder below

▼ Basic Arithmetic Review - Part 2 - Homework Folder Isolate

Online Homework Instructions

Instructions:

- Complete the homework assignment below *after* the In-Class Lecture and Video Lecture/Lesson is complete.
- There is no time limit on the assignment and you do not have to work all the problems at once.
- You may work each problem three (3) times, after the third attempt, you can generate a new problem for full credit.
- You may continue to work on and earn credit for the problem by clicking "Reattempt problem" or "Try a similar problem".

To attain mastery of the material, continue working on the assignment until you earn **at least** 90% before going on to the lesson quiz.

WRITE DOWN your work for each problem as you do the homework. You are creating a resource for yourself that will help you as you work through the different parts of the lesson. Your work should be numbered and neat, so that you can refer to it easily. Include notes to yourself on difficult problems. Bring all supporting work to class.

BA9 - Online HW
Due Wed 1/28/15, 6:00 pm LatePass Allowed
This homework covers Class Video Lecture and Lesson

BA10 - Online HW
Due Wed 1/28/15, 6:00 pm LatePass Allowed
This homework covers Class Video Lecture and Lesson

BA11 - Online HW
Due Wed 1/28/15, 6:00 pm LatePass Allowed
This homework covers Class Video Lecture and Lesson

Expand Folder you may want to print out Practice Problem to be complete in class.

Online Homework to be completed prior to next class

Student Performance Assessment:**Grading Evaluation and Performance Assessment:**

Your final average will be valued according to the following grading scale:

Evaluation / Assessments		
Video Lectures/ Lessons	10%	
Homework	15%	90 - 100 % = A
Quizzes	15%	80 - 89 % = B
Midterm	20%	70 - 79 % = C
Final	25%	60 - 69 % = D
In Class Projects	15%	59 - 0 % = F
Total	100%	

Class Room Policies, Absences, Help and Make-up Work:

Special Rules: Use of cell phones or laptops is not allowed once class has started. Cell phones will not be allowed on Quizzes or Test. For assistance in class, come see me during office hours or email via Atlas or Blackboard with your questions. I will typically respond to your questions within 48hours. Please be sure to include details of what problem you are working on .

Disclaimer: Changes in the syllabus and/or schedule may be made at any time by announcement from the instructor.

No-Show Procedure:

Any student who does not attend class **prior to the start of the no-show reporting period for the part of term of this course** will be withdrawn by the instructor as a no-show. This will count as an attempt in the class, and students will be liable for tuition. If your plans have changed and you will not be attending this class, please withdraw yourself through your Atlas account during the drop period for this part of term.

Classroom Policies Attendance:

Classroom attendance and punctuality is vital to academic success. If you miss a class, you need to contact a classmate to get the notes you missed. Students who do not maintain regular attendance will be withdrawn by the professor, unless other arrangements have been made with the professor. Missing the equivalent of more than 3 weeks of classes for any reason, other **than absences excused in accordance with Valencia's policies, is excessive and a basis for withdrawal.** Being 15 minutes late for class or leaving prior to the end of class will count as an absence. It is the responsibility of the student to find out what was covered if you miss class.

Withdrawal:

Per Valencia Policy 4-07 (Academic Progress, Course Attendance and Grades, and Withdrawals), a student who withdraws from class before the established deadline for a particular term will receive a grade of "W". A student is not permitted to withdraw after the withdrawal deadline. **See Important Dates below for the Withdrawal Deadline for your part of term** A student who is withdrawn by faculty for violation of the class attendance policy will receive a grade of "W". Any student who withdraws or is withdrawn from a class during a third or subsequent attempt in the same course will be assigned a grade of "F". For a complete policy and procedure overview on Valencia Policy 6Hx28:4-07, please go to: <http://valenciacollege.edu/generalcounsel/policy/> .

Important Dates:

Summer Term: Classes begin May 11. Drop/Refund Deadline 11:59 p.m. May 18. No Show reporting period May 19-28. **Withdrawal deadline for W grade is 11:59 p.m. July 10.** Classes end July 30. . See final exam schedule at <http://valenciacollege.edu/calendar/FinalExam.cfm> for exam date and time.

Credit Classes Do Not Meet: May 25 – Memorial Day, July 3 – Independence Day

Make-up Policy:

Assignments, quizzes and exams will be allowed in cases of documented student emergencies and will be graded with a lower percentage every week that passes and is overdue (-10% weekly). For student emergencies, it is the student's responsibility to contact the instructor and provide documentation within one week unless special arrangements have been made previously.

Course Learning Outcomes:

This lecture/ is designed for Civil/Surveying Engineering Tech. and Drafting and Design Tech majors.

The major learning outcomes for this class include:

1. Student shall study basic Pre-Algebra topics including numbers, symbols and operations
2. Student will acquire an understanding of basic Algebraic Notations and Operations
3. Student will learn how to perform operations with fractions
4. Student will be exposed to basic quantities and Units of Measurements used in Engineering, Surveying and Construction applications
5. Students will develop an understanding of techniques employed to solve equations
6. Student will learn how to utilize the Cartesian Coordinate System in two dimensions
7. Student will learn how to solve a System of Linear Equations
8. Student will develop an understanding of measurements of shapes according to their size and position
9. Student will develop an understanding of practical Trigonometry used in Engineering, Surveying, Building
10. Student will learn how to perform operations related to the basic laws of exponents and Construction and similar technical work
11. Student will demonstrate ability to use calculator functions to include angle and trigonometric calculations
12. Student will demonstrate the ability to apply mathematical concepts to practical Engineering, Surveying and Building Construction problems

In addition, Students should be able to evaluate and solve systematically problems requiring computational skills, quantitative reasoning and symbolic reasoning. Also, students should be able to solve mathematical problems at the beginning and intermediate algebra level by identifying what information is available and relevant to the problem; by selecting or developing appropriate procedures and relationships; by correctly applying the methods selected to the information available; and by verifying the validity and appropriateness of the solution.

Course outline for MTB-2321-Technical Math, Fall 2013:

Date	Topics	Project	Open Source Textbook And Online Videos	HW Located in IMathAS	Quiz
5/14 Class 1	Basic Concepts, Fractions, Decimals		Basic Arithmetic Workbook Lesson 1: Whole Numbers Lesson 2,3,and4: Fractions Lesson 5: Decimals	Class 1 <i>Basic Arithmetic Review Part 1</i> BA1-HW, BA2-HW, BA3-HW, BA4-HW and BA5-HW Due : 5/21	Class #1 Online Due:5/21
5/21 Class 2	Unit Conversions, Geometry and Formulas	Project 1	Basic Arithmetic Workbook Lesson 9: Unit Conversion Lesson 10: Geometry: Perimeter Lesson 11: Geometry: Area and Volume	Class 2 <i>Basic Arithmetic Review Part 2</i> BA9-HW, BA10-HW, and BA11- HW Due: 5/28	Class #2 Online Due: 5/28
5/28 Class 3	Order of Operations Introduction to Variables Polynomials and Exponents		Introductory Algebra Textbook Lesson 2: Introduction to Variables Lesson3: Polynomials and Exponents, Part 1 Lesson 4: Polynomials and Exponents, Part 2	Class 3 <i>Introductory Algebra Lesson 2</i> IA Lesson 2 – Online HW <i>Introductory Algebra Lesson 3</i> IA Lesson 3 – Online HW <i>Introductory Algebra Lesson 3</i> IA Lesson 4 – Online HW Due: 6/4	Class #3 Online Due: 6/4
6/4 Class 4	Solving Equations, Linear Equation, Literal Equations and Inequalities	Project 2	Introductory Algebra Textbook Lesson 5: Solving Equations Lesson 6: Linear Equations Lesson 7: Literal Equations and Inequalities	Class 4 <i>Introductory Algebra Lesson 5</i> IA Lesson 5 – Online HW <i>Introductory Algebra Lesson 6</i> IA Lesson 6 – Online HW <i>Introductory Algebra Lesson 7</i> IA Lesson 7 – Online HW Due: 6/11	Class #4 Online Due: 6/11
6/11 Class 5	Graphs and Graphing Linear Equations, Introduction to Functions,	Project 3	Introductory Algebra Textbook Lesson 8: Graphs and Graphing Linear Equations Lesson 10: Linear Functions Lesson 11: More Linear functions	Class 5 <i>Introductory Algebra Lesson 8</i> IA Lesson 8 – Online HW <i>Introductory Algebra Lesson 10</i> IA Lesson 10 – Online HW <i>Introductory Algebra Lesson 11</i> IA Lesson 11 – Online HW Due: 6/18	Class #5 Online Due: 6/18
6/18 Class 6	System of Equations Exponents Factoring		Introductory Algebra Textbook Lesson 12: Systems of Equations Algebra 1 Textbook Lesson 1: Exponents Lesson 2: Factoring	Class 7 <i>Introductory Algebra Lesson 12</i> IA Lesson 12 – Online HW <i>Algebra One Lesson 1</i> A1 Lesson 1 – Online HW <i>Algebra One Lesson 2</i> A1 Lesson 2 – Online HW Due: 6/25	Class #6 Online Due: 6/25
6/25 Class 7	Quadratic Equations Radicals Rational Equations		Algebra 1 Textbook Lesson 3: Quadratic Equations Lesson 4: Radicals Lesson 5: Rational Equations	Class 8 <i>Algebra One Lesson 3</i> A1 Lesson 3– Online HW <i>Algebra One Lesson 4</i> A1 Lesson 4 – Online HW <i>Algebra One Lesson 5</i> A1 Lesson 5 – Online HW Due: 7/2	Class #7 Online Due: 7/2
Midterm to be Taken at the West Campus Testing Center between 6/25 and 7/2					

Date	Topics	Project	Open Source Textbook	HW Located in IMathAS	Quiz
7/2 Class 8	Geometry Triangles	Project 4	Geometry Textbook Lesson1: Angles and Formulas Trigonometry Lesson 1	Class 8 <i>Geometry Lesson 1</i> GEO Lesson 1 Online HW Due: 7/9	Class # 8 Online
7/9 Class 9	Right triangle		Trigonometry by Michael Corral, Schoolcraft College	Class 9 Trigonometry Lesson 1 TRIG Lesson 1 Online HW Due: 7/16	Class #9 Online Due: 7/16
7/16 Class 10	Trigonometry with any angles Vectors	Project 5	Trigonometry by Michael Corral, Schoolcraft College Trigonometry Lesson 2 Trigonometry by Michael Corral, Schoolcraft College Trigonometry Lesson 3	Class 10 Trigonometry Lesson 2 TRIG Lesson 2 Online HW Trigonometry Lesson 3 TRIG Lesson 3 Online HW Due: 7/23	Class #11 Due: 7/23
7/23 Class 11	Review				
7/30 Class 11	Final Exam				

Online Student Assessment of Instruction

As part of our continuing goal to provide the best possible instruction for Valencia College students, the student evaluation of instructor form is now available **online**. On a completely anonymous basis, all students are invited to complete this online form. To do so, go into Atlas, select “My Courses” then select the box at the right that says ‘Assessment Survey’. You will be able to submit one assessment form per class. After that, the form will no longer be available to you. To ensure that this process does not affect your grade, the **results are not shown to the instructor until after grades are submitted**. Please set aside some time toward the end of the semester to complete the assessment. By doing so, you will assist the instructor in assessing the effectiveness of his/her teaching methods and techniques for subsequent semesters. Thank you for your feedback.

Student Core Competencies

The faculty of Valencia College have established four Core Competencies that describe the learning outcomes for a Valencia graduate. They are: THINK, VALUE, COMMUNICATE, ACT. These general competencies can be applied in many contexts and must be developed over a lifetime. They specify how learning can be expressed and assessed in practice. They enable students and faculty to set learning goals and assess learning within and across the many disciplines of human inquiry. Use the descriptions and examples of academic work for each to measure your own learning outcomes. Samples of the academic work are great additions to your Learning Portfolio. For further information on student core competencies please go to www.valenciacollege.edu/competencies

Valencia College Core Competencies

“The faculty of Valencia College has identified four core competencies that define the learning outcomes for a successful Valencia graduate. These competencies are at the heart of the Valencia experience and provide the context for learning and assessment at Valencia College. You will be given opportunities to develop and practice these competencies in this class. The four competencies are:

THINK = Think clearly, critically, creatively; analyze, synthesize, integrate and evaluate in many domains of human inquiry.

- a) you will analyze data and scientific principles as they pertain to technical applications

- b) you will employ facts, formulas and procedures in lecture
- c) you will discover and understand how mathematics is important in various fields and in disciplines other than in engineering, drafting, construction management and surveying.
- d) you will be able to draw well supported conclusions about the importance of survey in your daily life and in your career
- e) you will be able to revise conclusions in light of new observations and interpretations

VALUE = Make reasoned judgments and responsible commitments.

- a) you will be able to compare personal, ethical, and scientific values in
- b) you will be able to see the value of the time commitment needed to succeed.

COMMUNICATE = Communicate with different audiences using varied means.

- a) you will be able to practice written communication skills
- b) you will be able to verbally communicate to fellow students and teachers using professional, scientific language during lectures

ACT = Act purposefully, effectively and responsibly.

- a) you will be able to manage your time and activities to achieve your academic goals
- b) you will meet deadlines
- c) you will apply the knowledge you learn to your career goals

Expected Student Conduct

Valencia College is dedicated not only to the advancement of knowledge and learning but is concerned with the development of responsible personal and social conduct. By enrolling at Valencia College, a student assumes the responsibility for becoming familiar with and abiding by the general rules of conduct. The primary responsibility for managing the classroom environment rests with the faculty. Students who engage in any prohibited or unlawful acts that result in the disruption of a class may be directed by the faculty member to leave the class. Violation of any classroom or Valencia's rules may lead to disciplinary action up to and including expulsion from Valencia. Disciplinary action could include being withdrawn from class, disciplinary warning, probation, suspension, expulsion, or other appropriate and authorized actions. You will find the Student Code of Conduct in the current Valencia Student Handbook.

Students with disabilities who qualify for academic accommodations must provide a letter from the Office for Students with Disabilities (OSD) and discuss specific needs with the professor, preferably during the first two weeks of class. The Office for Students with Disabilities determines accommodations based on appropriate documentation of disabilities (West Campus SSB 102, ext. 1523).

Disclaimer

"The course outline and syllabus are subject to change as needed; changes will be announced in class by using ATLAS email or BlackBoard, etc. Your continued participation in this course after the drop-add deadline period constitutes an agreement with and an acceptance of the conditions presented in this syllabus."

Attendance and Tardy Policy and Expectations

During each lecture, a roster will be provided for you to sign; if you are late to class, it is your responsibility to add your signature to the roster. Missing signatures are viewed as absences; leaving early from class, without professor approval, will be counted as an absence. More than one absence has proven, in the past, to be a sign that your grade will be substantially less than you may have hoped for and will result in the loss of field exercise points.

Additional Information on the Withdrawal Deadline and Policy

Per Valencia Policy 4-07 (Academic Progress, Course Attendance and Grades, and Withdrawals) a student who withdraws from class before the **withdrawal deadline of November 1, 2013** will receive a grade of "W." A student is not permitted to withdraw from this class after the withdrawal deadline; if you remain in the class after the withdrawal deadline, you can only receive a grade of A, B, C, D, F or I. An I grade will only be assigned under extraordinary circumstances that occur near the end of the semester. If you receive an I, the work missed must be made up during the following semester, at which time you will get an A, B,C,D or F. Failure to make up the work during the following semester will result in you getting a grade of F in the course. The professor will not withdraw any student for any reason; it is the responsibility of the student to withdraw themselves before the withdrawal deadline and to be aware of the date of the withdrawal deadline. Any student who withdraws from this class during a third or subsequent attempt in this course will be assigned a grade of "F."

Students on financial aid should consult an advisor or a counselor before withdrawing from a course; there may be financial aid implications to the student which he or she must know about to make an informed decision before withdrawing from a course. Students with some scholarships who withdraw or are withdrawn from a class must pay the college for the cost of the class. Other scholarship sponsors may also require repayment.

For a complete policy and procedure overview on Valencia Policy 4-07 please go to:

http://valenciacollege.edu/generalcounsel/policy/default.cfm?policyID=75&volumeID_1=4&navst

ADDITIONAL CLASSROOM INFORMATION

Security Statement

We want to reassure you that our security officers are here around the clock to ensure the safety and security of the campus community. It's important to remain alert and aware of your surroundings, especially during the early morning or evening hours. Remember that you can always call security for an escort if you feel uncomfortable walking alone on campus. White security phones can also be found in many of our buildings; simply pick up the phone and security will answer.

Finally, report any suspicious persons to West Campus Security at 407-582-1000, 407-582-1030 (after-hours number) or by using the yellow emergency call boxes located on light poles in the parking lots and along walkways.

Faculty/Student Communication

“Valencia College is committed to providing each student a quality educational experience. Faculty members have set high standards of instruction for themselves and for you. If you have a problem in a class, your first step is to talk to your instructor. If you are still dissatisfied, you may talk with the academic dean of the division for your class. We will work together to resolve any issues that arise.”

- During non-classroom hours, you can talk to me one half hour before and after class or I can be reached by email at sbowling6@valenciacollege.edu.
- I read my email every day and you will receive a response to your emails within 24-36 hours.

Academic Honesty Statement

“Each student is required to follow Valencia policy regarding academic honesty. All work submitted by students is expected to be the result of the student’s individual thoughts, research, and self-expression unless the assignment specifically states ‘group project.’”

Any student discovered to be cheating on an exam will receive an F for that exam.

No VC property may be removed from the lab.

Classroom Rules of Student Behavior

College policy prohibits children from attending lectures or labs; please, do not violate this policy. **Proper classroom etiquette** is required for you to attend this class; please do not create distractions while the professor is lecturing. More than one warning for improper classroom behavior, following a referral to the academic dean or the calling of security, will be grounds to be dropped from the course without a refund.

Additional Classroom Policies

Beepers or cell phones which emit audible tones should be **turned off or to vibrate** during periods when lectures are given in the lecture or the lab. Please, do not use your phone for text messaging during lectures; text messaging and phone calls can be completed outside the lecture room. The second time a student fails to comply with this policy will result in a referral to the academic dean; a warning after your meeting with the academic dean will be grounds to be dropped from the course without a refund.

Under no circumstances will your test scores, total points or final grades be discussed on the telephone. FERPA rights to privacy prevent the divulging of scores or related materials by

that means. Scores will only be given face-to-face with each student or by accessing your Atlas account.

Baycare Behavioral Health's Student Assistance Program

*“Valencia is committed to making sure all our students have a rewarding and successful college experience. To that purpose, Valencia students can get immediate help that may assist them with psychological issues dealing with stress, anxiety, depression, adjustment difficulties, substance abuse, time management as well as relationship problems dealing with school, home or work. Students have 24 hour unlimited access to the **Baycare Behavioral Health's confidential student assistance program** phone counseling services by calling **(800) 878-5470**. Three free confidential face-to-face counseling sessions are also available to students.”*

Students with Disabilities Information:

“Students with disabilities who qualify for academic accommodations must provide a Notification to Instructor (NTI) form from the Office for Students with Disabilities (OSD) and discuss specific needs with the professor, preferably during the first two weeks of class; accommodations will not be applied retroactively. The Office for Students with Disabilities determines accommodations based on appropriate documentation of disabilities.”

West Campus SSB, Rm. 102 Phone: 407-582-1523 Fax: 407-582-1326

College Catalog/Student Handbook/Policy Manual

- A full description of all College policies can be found in the College Catalog at <http://www.valenciacollege.edu/catalog/>
- The Student Handbook can be found at: <http://valenciacollege.edu/studentdev/CampusInformationServices.cfm>
- The Policy Manual can be found at <http://www.valenciacollege.edu/generalcounsel/>
- The college calendar can be found at <http://valenciacollege.edu/calendar/> for important dates.

Support Services

- Valencia College offers a variety of SkillShops: short seminars covering a variety of topics which deal with student success, goals and purpose. To check out Valencia's Skillshop offerings, go to: <http://valenciacollege.edu/studentervices/skillshops.cfm>

Study tips:

“LEARNING IS AN ACTION VERB!! Most students need to do more than just sit through lectures and reread their notes.

***Spend 1-2 hour blocks of time EVERY DAY** actively writing or discussing concepts to make them a part of your memory.*

Use the words you learn often, they will sink in better 😊.

Here are some study and classroom management tips that have assisted former students:

- *Attend class daily and don't be tardy. The introduction to each lecture explains the purpose of the entire lecture. Students who follow this rule won't miss important information.*
- *REWRITE YOUR NOTES soon after the lecture; if the instructor permits, tape record lectures and replay to refresh your memory when you rewrite your notes.*
- *Create flash cards with questions you make up from the lecture and lab with answers on the back.*
- *Use mnemonic devices and other games to remember concepts; go to Google images, YouTube and Khan Academy for additional pictures and videos to clarify concepts.*
- *Make lists of confusing topics from your studying and ask questions.*
- *Take advantage of the professor's office hours.*
- *JOIN A STUDY GROUP and predict what questions the professor could ask on the test.*
- *Get the telephone number of one or more buddies in case you are absent from a class.*