Syllabus

Math 65: Introductory algebra

Introductory Algebra - Second Term Introduces algebraic concepts and processes with a focus on polynomials, exponents, roots, geometry, dimensional analysis, solving quadratic equations, and graphing parabolas. Emphasizes number-sense, applications, graphs, formulas, and proper mathematical notation. Recommended: MTH 60 or MTH 62 be taken within the past 4 terms. The PCC math department recommends that students take MTH courses in consecutive terms. Prerequisites: (MTH 60 or MTH 62) and (RD 80 or ESOL 250) or equivalent placement. Audit available. (For detailed information, see the Course Content and Outcome Guide.

Instructor information

Jeff Pettit Portland Community College Rock Creek Campus 17705 NW Springville Rd Portland, OR 97229

Office Phone: 971 722 7681. In addition to my office phone, I can answer general questions and math problems via texting if you include enough details that I would not need any other reference: cell phone: 503-867-2455. I can only release private information (like scores on assignments) via pcc.edu email.

Please use the Classlist tab to email me from within D2L, but to email me after the D2L shell closes, please email me at jeffrey.pettit@pcc.edu

Open all Close all

Course information

CRN: 42549 4 Credits

September 27, 2021 thru December 16, 2021

Term: Fall 2021

Meeting day(s): Normally, there are two required on campus proctored exams during the term outlined in the <u>class calendar</u>. Since campuses are closed, we will offer exams taken at home. There is an advantage to taking the Exam as proctored since you can ask the Instructor for clarification; so, if you want to take an exam during one of my other remote classes (Monday 9:30am and Wednesday 9:30am-noon; Finals Week, Monday 9am-11am). I encourage you to do so. Please contact me to make arrangements. Please read the following:

• While some online classes complete everything online, all MTH 65 classes at PCC have proctored exam requirements.

- PCC requires you to come to campus twice this term.
- The on-campus exams are compulsory.
- You can not receive a passing grade in this class if you do not take the 2 on-campus exams.
- If proctored exams pose an unfair or unreasonable requirement, please consider dropping this class.
- You can drop this class by the end of Week 1 and receive a complete refund.
- If you do not log into the course early in the week, and have not contacted me, please be aware that you will likely be dropped from the course. If you are dropped from the course for not logging into D2L within the first week and you wish to remain in the course, please contact me as soon as you can. Please see the following for more details regarding attendance: www.pcc.edu/enroll/registration/policies.html

Course outcomes

By the end of this course, you should be able to:

- Recognize and apply the operations necessary to simplify expressions and solve equations.
- Perform polynomial addition, subtraction, and multiplication and perform polynomial division by a monomial.
- Use exponent and radical properties to simplify expressions and solve radical and quadratic equations.
- Distinguish among perimeter, area, and volume and apply the formulas and appropriate units in contextual situations.
- Perform unit conversions.
- Distinguish between quadratic and linear relationships in symbolic, graphical, and verbal forms.
- Create quadratic models, make predictions, and interpret the meaning of intercepts, vertices, and maximum or minimum values.

Grading options

Please note the following:

- 1. If you would like to be assigned a pass/no pass grade for the class, you must change your grading option through myPCC by Saturday, November 28 at 10pm.
- 2. If you decide to drop the class, you must officially withdraw (you can do so using myPCC).
- 3. A student who does not complete the course and does not officially withdraw by Saturday, November 28 at 10pm will receive a failing grade for the course unless you have made special arrangements with the Instructor to delay.
- 4. If you would like to audit the course, you must discuss this with me, and submit a Registration and Change form to Registration Services by Tuesday, September 29 at 10pm.

Complete information regarding the college's grading guidelines may be found at pcc.edu/student-records/grading/

Dropping the course

If you need to drop the course:

1. You can drop the course with full refund in person or online using my.pcc before Tuesday, September 29 at 10pm.

- 2. You can drop the course by Saturday, November 28 and receive a W. After that date, if you are still enrolled, Instructors must assign a grade.
- 3. If you retake a course, the last grade achieved stands.

Complete information regarding the college's add/drop/withdraw deadlines may be found at www.pcc.edu/enroll/registration/dropping.html

Textbook

This course uses a free textbook, Open Resource for Community College Algebra written by PCC faculty. You can use the online version by going to spot.pcc.edu/math/orcca/, where there are links for the second edition: 1) a free electronic version; 2) a free pdf version, or 3) a bound copy from Amazon. Or you can purchase a printed copy from the bookstore.

Title: Open Resource for Community College Algebra, 2nd Edition (Chapters 5-9)

Author: Portland Community College Faculty

Prerequisites

(MTH 60 or MTH 62) and (RD 80 or ESOL 250)

Instructional approach

This course is separated into 'Modules', each one will correspond to the material to be covered during that week; for example Module 1 corresponds to the material covered in Week 1, Module 2 to Week 2, and so on. Each module will contain (not necessarily in the same order each time):

- An introduction which describes the module's subject matter in brief;
- Lecture video and/or lecture notes;
- A link to the first section of the suggested reading from the text;
- Assignments (with due dates);
- Homework problems completed on WeBWorK (using the link on the list of tabs). WeBWorK is a free online homework shell separate from D2L. It checks your work with descriptions of possible errors and also, if you use the "Show me another" button offers step-by-step instruction if you use the "solution" link. If you would prefer not to use WeBWorK, but to submit homework on paper, please contact me for options;
- Conclusion.

Assignments are described in detail below in the <u>grading</u> section; in brief they consist of online discussions, WeBWorK quizzes, one WeBWorK Exam done online only, one formal mid-term exam where work done on paper is submitted, one formal final exam where work done on paper is submitted, and WeBWorK homework.

Due dates will be listed within the module itself.

I have office hours at the Rock Creek campus, and am sometimes at the Rock Creek Tutoring Center. You are encouraged to visit in person, but most students meet via email, texting, phone, or via Zoom meeting.

Grading

There are 6 elements of your grade, which are spread throughout the modules as detailed in the <u>class calendar</u>:

- Online WeBWorK quizzes (20%): There are two types of quizzes: "one try" and "high score." You may only take a "one try" quiz once, but "high score" quizzes show you which problems you got correct and offers you the option to try incorrect problems again (which I strongly recommend). Please note that both types of quizzes count towards your grade.
- Online discussions (5%): To emulate the interaction that occurs in a classroom setting, you must make discussion postings every week. Instructions will be given in each learning module.
- WeBWorK homework (10%): One of the keys to learning mathematics is to practice it. Occassionally, some students prefer not to do homework online but hand-written on paper. If you do not want to work within WeBWorK, you can print homework and enter answers later, or contact me to discuss other options.
- Exam 1 online (15%): This exam will be taken online within WeBWorK, and is worth 15% of your grade. <u>Please see</u> calendar for dates.
- Exam 2 on campus (20%): This exam will be taken on campus (at Rock Creek). Please see the calendar for details. I will *not* send you your graded exam, but you can come to campus to receive detailed feedback on it.
- Final (30%): The final will be a comprehensive exam, and will be given on campus (at Rock Creek) during finals week. If you are unable to attend the on campus meeting, you will be responsible for arranging an alternate time and place to take the final -- please contact me asap to make arrangements if you cannot come to campus to take the Exams.

An estimate of your grade so far is listed under the Grades tab. The Instructor aims to update weekly any scores that are entered by hand or transferred from WeBWorK. Your "grade so far" will be affected by natural delays in transferring scores by hand into the grade book.

Please note that if you live in the Portland area, then you must attend Exam 2 and the Final on campus. If you live outside of the Portland area or if your schedule makes it impossible for you to come to either the afternoon or evening times for the Exams, then you must arrange to take an exam at a testing center, most likely at a college convenient to you. In this case, you are responsible for making the arrangements. Please contact me for further instruction if this applies to you. The grading scale is as follows:

A: >90%

B: 80 - 89%

C: 70 - 79%

D: 60 - 69%

F: less than 60%

For details about P/NP or Audit, please see the guidelines here.

If you have special needs, are falling behind, or will need to miss an on campus exam, please make arrangements with me ahead of time. Missed assignments and/or exams without prior arrangements may result in a zero.

Tutoring

- PCC has joined a tutoring scheme in the Northwest which gives PCC students access to free online tutoring. Here's the information:
 - 1. etutoringonline.org/

Select "Login" and follow the steps using the following:

- 2. username: your PCC username
- 3. password: your G# (including the G- if you don't know your G#, you can find it in myPCC)
- If you would like face-to-face tutoring, you might like to go to one of the tutoring centers on campus; see here for details: http://www.pcc.edu/resources/tutoring/

E-mail contact

Please send *all e-mails* through the e-mail tool in D2L - there should be a 'Welcome' message from me waiting for you. Please make sure that the subject of your e-mail relates to the content of your e-mail.

I will do my best to respond to emails sent Mon-Fri within 24 hours, and to any e-mails sent at the weekend on the following Monday.

Grade posting

Grades will generally be posted within one week of the deadline of each assignment or assessment.

Late work policy

Please note that although *all* late work is subject to the following penalties, I understand online students lead hectic lives and often encounter obstacles face-to-face students do not, so I am open to offering full credit for late work submitted if you contact me via D2L email. That being said, students that turn work in ahead of schedule generally do very well in online courses and students that do not, generally struggle in online courses. Please make a goal to get all assignments in at least one day ahead of schedule:

Generally, full credit is offered for late work, but the Instructor reserves the right to apply the following deductions for late work:

- 25% points deducted for the first day
- 35% points deducted for the second day

Any work submitted more than 2 days after the deadline is subject to *not* being graded, and is subject to earning a 0. But again, although I reserve the right to deduct points, I nearly always offer full credit unless the student submits late work chronically.

Software & Hardware Requirements/Recommendations

You will need a computer with reliable Internet access.

Your web browser

This course should work in any web browser. However, please consider that:

- I recommend <u>Firefox</u> which is free.
- I recommend that you do not use Internet Explorer, and although Safari works well for D2L, some items in my files may not display (dates listed on the calendar, for example).

Word processing

You will need to submit assignments throughout the term (<u>see calendar for details</u>). These documents will require you to hand-write and electronically send materials (for example as an image captured using a cellphone) and/or enter Mathematical content using an equation editor. I will only accept documents in either .pdf or .jpg format. If you cannot send hand-written work as a .jpg or .pdf file, your choices for word processing are therefore:

- Microsoft Word -- if you don't have it, you should be able to get a free copy as a PCC student. See details in the "Welcome" email I sent.
- Open Office (free)

You can also use a Google doc or Pages, provided that you export it to one of the formats listed above.

Graphing

A computer graphing program of some kind. If you do not already have one, then I recommend the following (free) programs

- GeoGebra, located at http://www.geogebra.org/
- Desmos, located at https://www.desmos.com/
- Windows: http://www.padowan.dk/graph/. Once you have downloaded it read these instructions
 To draw a graph, go to
 - 1. Function->Insert Function
 - 2. Enter your equation into the box that says f(x)=
 - 3. You can then change your viewing axis by clicking on the 'Axes' icon in the left hand pane of the window.

To save your graph as a picture, go to

- 4. File->Save as image
- 5. Choose a file name
- o MAC: the inbuilt graphing calculator

Linux: GNUplot

Minimum technical skills

Students should be able to:

- install software on their operating system
- troubleshoot software problems
- upload images of hand-written work and/or write a document containing equations (or be willing to learn how)
- use graphing software (or be willing to learn how)
- use the fraction button on a scientific calcuator (or be willing to learn how)

MyMathLab

This course does not use MyMathLab. If you like online homework, I believe you will find that our WeBWorK shell is very similar to MyMathLab and it is free -- see the homepage for a link or contact the Instructor for questions and details.

MyMathLab is a good resource; it contains practice problems and tests, together with additional lecture notes. If you would prefer a course that uses MyMathLab extensively, you might like to enroll in Frank Goulard's or Kim Neuburger's MTH 65 online class.

Calculator requirements

The TI-30X II is recommended. If you wish to get a graphing calculator, for those going on to and above MTH 95, be aware that the PCC Math Department does not require student to purchase a graphing calculator though other departments and institutions may do so; instead, the PCC Math Department incorporates free graphing software (like Desmos and GeoGebra) as a requirement for Math 95 and beyond.

I encourage the use of calculators and Desmos and GeoGebra while you are studying -- to check your simple arithmetic computations (do them first without a calculator!) and to check the graphs you have done by hand. Not only will it help you to understand the mathematics by enabling you see it from another perspective, but it will familiarize you with mathematical technology which will prepare you for future classes where technology will be used more often.

Please note: you will not be allowed to use a graphing calculator during exams. There may be exams in which you are not allowed to use *any* calculator.

Participation expectations

I recommend logging in to D2L at least once every couple of days (ideally you would login once per day) to check for important announcements, and to participate in discussion postings.

You are required to make one discussion posting per week (details will be given in each learning module). I advise you to read other students' work and my responses to see if you have similar questions; if you can offer help to your classmates then please do so!

Student code of conduct

Students are required to complete courses in accordance with the Student Rights and Responsibilities Handbook. For PCC's policies on integrity, cheating, dishonesty, plagiarism, student rights, etc. please see the following websites: pcc.edu/about/policy/student-rights/

Discussion and e-mail etiquette

Please use the rules of "Netiquette" ("online etiquette") to ensure you communicate successfully in the online environment:

- Write a meaningful subject line for your e-mail and message board contributions so others will know what to expect. (Notice that when you reply to a discussion post, you can change the subject line if appropriate to something more meaningful.)
- Be polite and respectful. It can be tempting to let yourself go in an environment that feels anonymous, but remember that there are real people reading your messages. Good online manners are vital to a productive and supportive online learning environment. A useful test for anything you're about to post or mail is to ask yourself, "Would I say this to the person's face?" If the answer is no, re-write and re-read.
- Be tolerant of views expressed by others. Your PCC online classroom may well bring you into contact with people from all over the world. Keep in mind that you probably have something to gain from exposure to views and backgrounds different than your own.
- When reacting to someone else's message, address the ideas, not the person. Again, remember that there are real people on the other end.
- Be careful when using sarcasm and humor, and don't include any obscenities in your messages. Because readers cannot see your face or body language, they may misinterpret the shades of meaning in the messages. They may misinterpret your remark, and you never know who may be offended by expressions that are commonplace to you.
- Avoid using all capital letters, which are interpreted as shouting.
- Don't send commercial advertisements and avoid sending anything that may be seen as "spam" to your classmates.
- If you want to post a message only to one person, send a private e-mail message instead of posting to the discussion board.
- Use standard English grammar and spelling, and avoid abbreviations.
- A discussion board is a place for you to develop your ideas more completely, give and receive meaningful feedback and improve understanding. Expect to post and reply with messages of substance.

For more information about appropriate online communication, please see Communicating effectively online.

Flexibility statement

The course learning module schedule may be changed in response to institutional, weather, or class issues. Any changes will be announced online. You are responsible for checking the course calendar, syllabus, discussions, and your e-mail periodically to see if there are any changes.

All assignments, discussion and testing is done through this web based class with the exception of the proctored Exams which are given at a PCC Rock Creek or another educational institution's equivalent facility. (An educational institution other than PCC may charge a nominal fee for the proctored test. Any such fee will be the responsibility of the student.)

ADA Statement

Disability Services works with students and faculty to minimize barriers. If students elect to use approved academic accommodations, they must provide in advance formal notification from Disability Services to the instructor. pcc.edu/disability-services/.

Title IX Statement

PCC is committed to creating and fostering a learning and working environment based on open communication and mutual respect. If you believe you have encountered sexual harassment, sexual misconduct, sexual assault, or discrimination based on race, color, religion, age, national origin, veteran status, sex, sexual orientation, gender identity, or disability please contact the Office of Equity and Inclusion at (971) 722-5840 or equity.inclusion@pcc.edu

Sanctuary Statement

PCC is a sanctuary college. For more information and resources, see pcc.edu/dream/undocumented/.

Course calendar

- all deadlines will be at 10pm on the Tuesday of the following week; for example, Quiz 1 High Score in Module 1 will have a deadline of 10pm on the Tuesday in Module 2
- Each week there are online WeBWorK homework problems. Occasionally, students are averse to online homework -- if you do not want to complete online WeBWorK problems, but instead prefer homework on paper, contact the Instructor to make arrangements.
- On campus Final Exam. Please see D2L calendar for choice of two times. The Final Exam covers all sections. A calculator is allowed for some of each exam (but not a graphing calculator). I plan to bring extra calculators.

Module	Assignments and Assessments (If dates do not appear, click here to download a pdf.)	Online WeBWorK Problems [Numbers in parentheses () are not within WeBWorK but need to be done on paper from ORCCA]	Hand-written Homework problems (from ORCCA) Complete them for practice, do not submit. Download answers here.
Module 1 Dates: Monday 9/27/21 - Tuesday 10/5/21	 Introduce yourself discussion Quiz A (High score): Course Details Quiz 1 (High score): 5.1-5.3 Quiz 1 (one try): 5.1-5.3 Introductory assignment WeBWorK, Sections 5.1-5.3 If you prefer submitting homework on paper instead of using WeBWorK, contact me to discuss options. Module 1 discussion post 	 5.1: 5, 7, 25, 27, 31, 35, 41, 57, 65, 67, 69, 71, 73, 77, 83, 87, 91 5.2: 9, 11, 13, 15, 19, 21, 23, 25, 27, 31, 33, 35, 37, 39, 41, 45, 47, 51, 55, 57, 61, 65 5.3: 1, 3, 5, 19, 21, 23, 25, 29, 33, 35, 37 	
Module 2 Dates: Monday 10/4/21 - Tuesday 10/12/21	 Homework set 1. WeBWorK, Sections 5.4-5.6 If you prefer submitting homework on paper instead of using WeBWorK, contact me to discuss options. Module 2 discussion post 	 5.4: 17, 23, 33, 35, 39, 43, 45, 51, 59, 61, 67, 69, 71, 73, 77, 79, 85 5.5: 13, 17, 21, 25, 29, 31, 35, 39, 43, 47, 51, 69 5.6: 1, 7, 9, 11, 13, 15, 17, 19, 21, 23, 29, 33, 37, 39, 43, 45, 47, 49, 55, 67, 71, 75, 79, 95, 99, 105, 115, 117 	
Module 3 Dates: Monday 10/11/21 - Tuesday 10/19/21	 Quiz 2 (High score): 5.4-6.3 Quiz 2 (one try): 5.4-6.3 WeBWorK, Sections 6.1-6.3 If you prefer submitting homework on paper instead of using WeBWorK, contact me to discuss options. Module 3 discussion post 	 6.1: 3, 5, 15, 17, 21, 25, 27, 31, 33, 37, 41, 45, 47, 49, 53, 57, 65, 67, 71, 75, 79, 81, 83, 87, 93, 97, 99 6.2: 9, 11, 13, 21, 23, 25, 27, 39, 41, 43, 45 	•

		• 6.3: 15, 19, 21, 23, 27, 31, 37, 39, 41, 43, 45, 49, 51, 57, 61, 63, 67, 73	
Module 4 Dates: Monday 10/18/21 - Tuesday 10/26/21	 Exam 1 ONLINE (see assessments) (Sections 5.1-6.3) WeBWorK, Sections 6.4 If you prefer submitting homework on paper instead of using WeBWorK, contact me to discuss options. Module 4 discussion post 	• 6.4: 13, 15, 17, 19, 21, 29, 33, 35, 37, 39, 43	•
Module 5 Dates: Monday 10/25/21 - Tuesday 11/2/21	 Homework set 2. WeBWorK, Sections 7.1-7.3 If you prefer submitting homework on paper instead of using WeBWorK, contact me to discuss options. Module 5 discussion post 	 7.1: 1, 5, 9, 21, 23, 25, 29, 31, 33, 35, 37, 39, 43, 45 7.2: 11, 15, 17, 19, 23, 25, 31, 33, 35, 39, 43, 45, 49, 53, 57, 61, 63, 65, 67, 69 7.3: 1, 3, 5, 7, 9, 11, 13, 15, 17, 19 	•
Module 6 Dates: Monday 11/1/21 - Tuesday 11/9/21	 Quiz 3 (High score): 7.1-7.4, 8.1 Quiz 3 (one try): 7.1-7.4, 8.1 WeBWorK, Sections 7.4 and 8.1 If you prefer submitting homework on paper instead of using WeBWorK, contact me to discuss options. Module 6 discussion post 	 7.4: 1, 3, 7, 9, 13, 15, 19, 21, 25, 27, 31, 33, 37, 39, 43, 45, 49, 51, 55, 57, 61, 63, 67, 69 8.1: 1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 21, 23, 25, 29, 33, 35, 37, 41 	•
Module 7 Dates: Monday 11/8/21 - Tuesday 11/16/21	 Homework set 3. WeBWorK, Sections 8.2-8.4 If you prefer submitting homework on paper instead of using WeBWorK, contact me to discuss options. 	 8.2: 7, 11, 15, 21, 25, 29, 35, 43, 45, 49, 51 8.3: 1, 3, 7, 9, 11, 13, 15, 19, 27, 31, 	•

	Module 7 discussion post	37, 39, 43, 47, 49, 51 • 8.4: 1, 3, 9, 11, 15, 17, 19	
Module 8 Dates: Monday 11/15/21 - Tuesday 11/23/21	 Exam 2 ON CAMPUS. Please see D2L calendar for choice of two times. (Exam 2 covers Sections 6.4-8.4. A calculator is allowed for some of each exam (but not a graphing calculator). I plan to bring extra calculators.) WeBWorK, Sections 9.1 If you prefer submitting homework on paper instead of using WeBWorK, contact me to discuss options. Module 8 discussion post Quiz 4 (High score): 8.2-8.4, and 9.1 Quiz 4 (one try): 8.2-8.4, and 9.1 	• 9.1: 1, (3), 5, 7, 9, 11, (13), (15), (17), (19), 23	• ORCCA Sec. 9.1: 3, 13, 15, 17, 19
Module 9 Dates: Monday 11/22/21 - Tuesday 11/30/21	 Homework set 4. WeBWorK, Sections 9.2 and 9.3 If you prefer submitting homework on paper instead of using WeBWorK, contact me to discuss options. Module 9 discussion post 	 9.2: 9, 13, 17, 21, 25, (29), (31), (33), 35, (37), (39), (41), 45, 49, 53, 57 9.3: 13, 15, 17, 19, 23, 25, (33), (35), (37), (39), (41), (43), (47), 53, 55, 57, 61, 63 	 ORCCA Sec. 9.2: 29, 31, 33, 37, 39, 41 ORCCA Sec. 9.3: 33, 35, 37, 39, 41, 43, 47
Module 10 Dates: Monday 11/29/21 - Tuesday 12/7/21	 WeBWorK, Sections 9.4 If you prefer submitting homework on paper instead of using WeBWorK, contact me to discuss options. Module 10 discussion post 	• 9.4: 3, 5, 7, 9, 11, 13, 15, 17, 19	•
Week 11 Dates: Monday 12/6/21 -	Review and prepare for Final Exam	•	

Tuesday 12/14/21			
Final Exam Week: Monday 12/13/21 - Saturday 12/18/21	On campus Final Exam. Please see D2L calendar for choice of two times. The Final Exam covers all sections. A calculator is allowed for some of each exam (but not a graphing calculator). I plan to bring extra calculators.	•	