



**DEPARTMENT OF MATHEMATICS  
CENTRAL WASHINGTON UNIVERSITY**

**Math 226, Spring 2021**

*It is your responsibility to read, understand, and follow the syllabus guidelines.*

<b>Course ID(s):</b> 32410	<b>Course Format:</b> Online
<b>Instructor:</b> Molly Andaya	<b>Office Phone:</b> 509-963-1826
<b>Email:</b> molly.andaya@cwu.edu	<b>Office:</b> Samuelson 228K/my home
<b>Office Hours:</b> Virtual Hours (Monday – Friday by appointment)	

**COURSE DESCRIPTION & OUTCOMES**

This course is designed for students who plan to teach at the elementary or middle level grades and who have declared education as their major course of study. This course focuses on an intuitive development of geometric ideas including point set Euclidean geometry, measurement, area, perimeter, volume, and transformational geometry. Students completing the course should develop precise mathematical language, improve their understanding of geometric concepts, and develop methods to teach geometry for understanding.

After completing this course, you will be able to

- Persevere when faced with new, challenging concepts
- Express mathematical ideas orally and in writing
- Make and test conjectures
- Formulate counterexamples
- Find the perimeter, area, and volume of geometric figures
- Use standard and non-standard units of measure to solve problems
- Convert from one unit to another in standard and metric measurement systems
- Name and discuss two- and three-dimensional figures
- Demonstrate a knowledge of the relationship between parallel lines and angle measure
- Demonstrate a knowledge of the properties of triangles and special cases of triangles
- Demonstrate understanding of the sum of interior, central and exterior angles of polygons
- Explain and use the properties of quadrilaterals
- Identify and create basic geometric transformations
- Identify and explain different types of symmetries



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**COURSE MATERIALS**

<b>Required:</b>	<b>Optional:</b>
<i>Mathematics for Elementary Teachers with Activities, 5e</i> , by Sybilla Beckmann *This text is used in Math 164 and Math 316 as well.  Access to <i>printer, coloring items, calculator</i>	<i>Notebook (to keep text and class items organized for future reference)</i>

**GRADE CATEGORIES AND GRADING SCALE**

<b>Graded Items</b>	<b>% of Grade</b>
ACTIVITIES (written and/or video submissions)	30%
HOMEWORK	20%
ASSESSMENTS (online quizzes and written exams)	50%
<b>TOTAL</b>	<b>100%</b>

<b>Grading Scale</b>	<b>Letter Grade</b>
93-100%	<b>A</b>
90-92%	<b>A-</b>
87-89%	<b>B+</b>
83-86%	<b>B</b>
80-82 %	<b>B-</b>
77-79%	<b>C+</b>

<b>Grading Scale</b>	<b>Letter Grade</b>
73-76%	<b>C</b>
70-72%	<b>C-</b>
67-69%	<b>D+</b>
63-66%	<b>D</b>
60-62%	<b>D-</b>
59% or less	<b>F</b>

**COURSE ACTIVITIES**

- **Readings/Notes**

Expect to read in your text and/or my written notes weekly. You will also watch video demonstrations several times. All of this will clearly be noted in the weekly modules.

- **Activities (written and/or video submissions)**

There will be several activities each week that allow you to explore the concepts you are learning. Some of these activities are in the back of your text (in the “Class Activities” section), and some I have created. You must print out and write on the actual activity page (or a copy of it if you don’t want to write on the textbook pages). You will not get credit for simply writing the answers to the questions on your own piece of paper. *\*If you are wondering why...* it is much more efficient (and thus quicker) to grade assignment submissions that look the same. Sifting through a class set of papers that are all laid out differently significantly increases the amount of time it takes to grade and return to students. If you have the technology to write on PDF documents electronically, you may do that and submit instead of printing. Some activities may be completed as part of a group.



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- **Homework**

Most weeks you will have a set of homework problems. The homework is designed to allow you to practice as well as extend your knowledge of the concepts. The homework will be located in your text as well as additional sources (posted on Canvas). Be prepared to print the homework assignments. You will be expected to show work and clearly identify your answers.

- **Weekly Quizzes**

You will have an online quiz that you will access in Canvas at the end of each week. The quizzes will cover the material from that week. You will get one attempt at each quiz, unless otherwise noted in the quiz directions. There is a time limit for each quiz, and you will be expected to take the quiz in one sitting. If you get interrupted, you will not be able to access the quiz again.

- **Written Exams (including the Final Exam)**

You will have exams (or portions of the weekly quizzes) that you will have to PRINT and submit electronically. Like activities, you will need to write on the document that is posted, and no credit will be awarded for simply doing the work and answers on your own paper. You will have a comprehensive final exam during finals week. This will most likely be a written submission.

### Submitting Electronic Files

All electronic files must be submitted in .doc, .docx or .pdf format. If you don't have Microsoft Office, you can download it for free, using your CWU email and password from the [MS Office website](#). Here is the guide on [How to download MS Office](#). Mac users make sure to save documents with visible extension (.docx or .rtf).

## COURSE SCHEDULE

**Important:** This schedule is subject to change. All changes will be communicated through Canvas. It is the responsibility of the student to be aware of, and adhere to, any announced schedule changes.

Week	Big Idea	Possible Activities/Homework
1 (March 30 – April 4)	Geometry Basics	<ul style="list-style-type: none"><li>• Spatial Sense</li><li>• Van Hiele Assessment</li><li>• Matching Game</li><li>• Testing Geometry Principles</li><li>• HW 1</li></ul>
2 (April 5 – April 11)	Lines and Angles	<ul style="list-style-type: none"><li>• Measuring Angles</li><li>• Angle Pairs and intersecting lines</li><li>• Angles and parallel lines</li><li>• HW 2</li></ul>



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<b>3 &amp; 4</b> (April 12 – April 18) (April 19 – April 25)	Circles and Polygons	<ul style="list-style-type: none"> <li>• Triangle Varieties</li> <li>• Am I a triangle?</li> <li>• Quadrilateral Quirks</li> <li>• Sum of interior angles</li> <li>• Angles of polygons</li> <li>• HW 3 &amp; 4</li> </ul>
<b>5</b> (April 26 – May 2)	Symmetry and Transformations	<ul style="list-style-type: none"> <li>• Reflection Symmetry</li> <li>• Transformation Practice</li> <li>• HW 5</li> </ul>
<b>6, 7 &amp; 8</b> (May 3 – May 9) (May 10 – May 16) (May 17 – May 23)	Measurement (Conversions, area, perimeter, circles and Pythagorean Theorem)	<ul style="list-style-type: none"> <li>• Act 11D</li> <li>• Conversions (Dimensional Analysis)</li> <li>• Act 11J</li> <li>• Area of Quadrilaterals</li> <li>• Area of Triangles</li> <li>• Area of Irregular Polygons</li> <li>• Act 12N</li> <li>• Act 12Q</li> <li>• Math’s Mosaic</li> <li>• HW 6, 7, &amp; 8</li> </ul>
<b>9</b> (May 24 – May 30)	Polyhedron	<ul style="list-style-type: none"> <li>• Names of Polyhedron</li> <li>• Identify Polyhedron</li> <li>• Euler’s Law</li> <li>• HW 9</li> </ul>
<b>10</b> (May 31 – June 6)	Surface Area	<ul style="list-style-type: none"> <li>• Surface Area of Box</li> <li>• Platonic Solids</li> </ul>
<b>Finals</b> (June 7 – June 11)	All sections	<ul style="list-style-type: none"> <li>• Final Exam (cumulative)</li> </ul>

*\*You are taking classes to become a teacher...you need to start to shift your thinking to the “teacher mentality”. Your work should start to become “teacher quality”. The work you do in the classes you are taking is practice for the work you will do in front of your students (and their parents) and administrators. Everything that you turn in to me (or any other instructor) should reflect the quality of work you will be doing as a teacher.*

### DUE DATES & LATE WORK

- The due date for work submitted for this class will be **SUNDAYS, 6PM**.
  - Work that is submitted Monday – Thursday of each week will be eligible for corrections and resubmissions.
  - Work that is turned in Friday, Saturday or Sunday before the deadline is considered “on time” but will not be eligible for corrections and resubmissions.
- Grades will be updated periodically throughout each week. Please watch your grade and ask questions if you have them.



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▪ Please manage your time for this class. **Late work is not accepted.** If *extenuating* (my judgement) circumstances exist, contact me *well in advance*.

- **Documentation must accompany any request for deadline extensions.** Generally, because students have the entire week to work on the material, requests for extensions are *not* granted.
- Missed course requirements are entered into grades as “0” points.

### Challenges to Grades

There is a statute of limitations of one week after assignments are graded for challenges to graded items. This means you have one week to raise any issues with your grade. If you do not check GRADES in Canvas and do not realize until several weeks after an assignment is due that you have a question about the score you received, it will be too late to make any grade changes. If you keep up to date by checking your e-mail and GRADES, you should have no issues. I will normally have all assignments graded within one week after they are due.

### INSTRUCTOR FEEDBACK / COMMUNICATION

- **Timely Feedback**

You will be given timely feedback for all your questions you have throughout this course. The maximum response time will be 24 hours.

*Exceptions:*

- *If you ask a question after 3pm or on the weekend, you may have to wait until the next school day to get a response.*

- **Contacting the Instructor**

For quickest response, the best way to contact me is via message using the Canvas inbox. I will check email multiple times a day, Mondays – Fridays, and will respond within 24 hours (or sooner) during the work week. Check your CWU email numerous times a week to keep up with course communications. You can expect a weekly check-in email from me on Mondays. If you do not receive course messages, please make sure you have entered the correct email address in your Canvas profile settings.

### TECHNOLOGY SUPPORT

- There is a 24/7 Canvas support hotline available to you at 877-399-8897. You will find additional Canvas support and technology requirements on the [CWU online learning website](http://cwu.edu/online-learning), <http://cwu.edu/online-learning>. CWU Service Desk can assist you with MyCWU network and login issues ([servicedesk@cwu.edu](mailto:servicedesk@cwu.edu)): 509-963-2001.
- Canvas runs on Windows, Mac, Linux, iOS, Android, or any other device with a modern web browser. Canvas supports the last two versions of every browser release. We highly recommend updating to the newest version of whatever browser you are using as well as the most up-to-date Flash plug-in. This Canvas guide



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explains [Which browsers does Canvas support?](#) There are also tips on how to configure your chosen web browser to work best with Canvas.

- Canvas is not officially supported on mobile browsers, but it does have a Canvas Student App for iOS and Android. However, because it is made to work on a desktop, this is not the best interactive experience. Since Canvas uses small elements of Flash, not all Canvas features may be supported on mobile devices, especially on iOS.

**IMPORTANT:** Technology glitches can, and are likely to, occur; **do not wait until the last minute when doing assignments.** If you run out of time to complete a quiz, you will get “kicked off” and you will not be able to re-access. Activity and homework submissions close at the deadline, and if you try to submit after the deadline, you will be unable to submit. *Email submissions are not accepted.*

### COURSE POLICIES

- **Policy on Academic Dishonesty**

Students are on their honor to follow the student conduct code as outlined in the [Washington Administrative Code](#). Violations of this section will result in a failing grade in the course in addition to further possible university sanctions. (See <http://apps.leg.wa.gov/WAC/default.aspx?cite=106-125>.)

- **Policy on Diversity**

University-level education is about broadening horizons and looking at academic issues from a variety of perspectives. With this in mind, the participants in this class are encouraged to bring their own life experiences and viewpoints to bear on classroom discussions and assignments. Along with the freedom to express one's own views comes the responsibility to respect the views of others. No student will be discriminated against on the basis of race, ethnicity, age, creed, religion, gender, sexual orientation, marital status, or political ideology.

- **Disability Services**

Central Washington University is committed to creating a learning environment that meets the needs of its diverse student body. If you anticipate or experience any obstacles to learning, contact Disability Services to discuss a range of available options. Student Disability Services is located in Hogue 126. Call (509) 963-2214 or email [ds@cwu.edu](mailto:ds@cwu.edu) for more information.

### Netiquette

- Check the discussion frequently and respond appropriately, and on subject.
- Capitalize words only to highlight a point or for titles. Capitalizing otherwise is considered SHOUTING!
- Be professional and careful with your online interactions, including with me!
- Wait 24 hours before responding to something that angers you.
- All postings should be free of language that would constitute harassment, discrimination, or be considered profane.



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### STUDENT SUCCESS

Multiple resources are available to help students move past challenges and become academically successful.

- **Academic Success Center**

The CWU Academic Success Center helps students learn strategies that can increase GPA and improve course pass rates. All services are available online via Zoom unless otherwise noted. Expanded hours are available to meet student need. To access, go to [www.cwu.edu/asc](http://www.cwu.edu/asc) or <https://tutortrac.cwu.edu>, use your CWU login and password, and click the **Schedule an Appointment** link.

- **Tutors**

Several forms of peer tutoring are available. All Canvas courses include a direct link to a tutoring resources page. The PALS program pairs a trained tutor with a faculty member to promote learning strategies and content comprehension in specific courses. eTutoring allows students to get online help in 15 subjects with expanded hours of 5am-midnight, 7 days per week. To access, students visit [www.etutoringonline.org](http://www.etutoringonline.org), select CWU, and request a password link be sent to their CWU email address. A list of subjects is available at <https://www.cwu.edu/academic-success/online-tutoring/online-tutoring>

- **Academic Coaches**

Students can work one-on-one with an [academic coach](#) in individualized sessions that focus on building academic strength. Students can improve time management, develop a study plan, unpack how to process new information for deep understanding, increase reading and comprehension skills, and more. Coaches help students discover learning best strategies, maximize academic experiences, and reduce stress.

- **Writing Center**

Learning to write well can be a difficult skill set to develop, a process made easier via targeted feedback via the [CWU Writing Center](#). Students submit papers for review and receive detailed video comments from writing consultants in various disciplines. Students can also request a phone consult. Best results are achieved when students plan early for multiple rounds of feedback and revision.

- **Math Center**

Learning mathematics is challenging for many students. Students who struggle with math can access the [CWU Math Center](#). Students can connect with a math tutor for live help sessions that deal with all Quantitative Reasoning, 100-level, and other math courses. Zoom meetings, whiteboards, and other tools are used to promote deeper understanding of mathematics.