

Winter Term 2010

Origami Math

MW 10:20-12:25 ADMC BB 107
SLN 18789 A
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Core: The Core program consists of a coordinated series of courses that represent the various disciplines in the university. This course, along with the others in your cohort, fulfills one of the university's general education requirements in each of the areas of knowledge plus composition. The courses are designed to both support and challenge you to develop the critical thinking, writing, research, and analytical skills you'll need at UWT while introducing you to relevant topics in the social sciences, humanities, and sciences.

Course Description & Student Learning Objectives: This course will investigate geometry and art through paper folding and origami techniques. We will use this experience to approach and try to answer the following question: "What tools or rules should we use to create or discover geometry?"

Content *and* general skills will be developed.

Students will be able to:

- define origami & provide some history of its development.
- solve open-ended geometric problems involving lines, triangles, and circles.
- express geometric ideas to others through precise writing or speech.
- use geometry to aid in their own origami project.

More generally, by the end of this course students will have the skills to:

- express ideas clearly in writing and speaking in order to synthesize and evaluate information.
- identify, analyze, and summarize/represent the key elements of a text.
- self-assess personal strengths and how they help overcome weaknesses.
- approach a complex issue by breaking it down into manageable pieces.
- make connections among assignments and readings to develop a sense of the "big picture".
- collect, evaluate, and analyze information to solve problems or answer questions.

Required Items:

- Lang, Robert. *Origami Design Secrets: Mathematical Methods for an Ancient Art* ISBN: 1-568-81194-2
- Wheeler, Carolyn. *Practice Makes Perfect Geometry* ISBN:978-0-07-163814-2

Important Dates:

1/31	Midterm	1/9	Last day to alter your schedule with no fees
3/16	Final @ 10:20am	2/20	Last day to change your grading option

Journals:

You will keep a journal for this class much like you did in Dr. MacDonald's Introduction to Social Science. Journal assignments and questions will be assigned during each class and you are expected to complete the journal work by the next session. You are welcome to put additional thoughts and work in the journal, but keep the assignments in order and at the start of each new journal assignment write the date it was assigned. Bring the journals to class everyday so that they can help inform our discussions.

I will regularly collect the journals every Monday at the start of class and return them before class ends. When collected, the *entire* journal must be turned in and not just the newest entries. The journal must be kept separate from any course notes in either its own binder or bound book. The material will never formally graded, but I do read some of the entries and check for completion.

Homework:

Homework will be assigned everyday and collected weekly on Wednesdays. Ten minutes will be set aside at the start of every Wednesday to address homework questions. Assignments can be turned in after class, or slid under my office door by 8pm without being considered late. Once I have started marking an assignment, I no longer accept late work.

The homework will be largely comprised of three activities: group worksheets, individual computations, and origami work. Given the Student Learning Objectives described above, your work will be largely graded by the *process*, *explanation*, in addition to the *correctness*. Because of this, you may have to spend more time on your homework than you would on a more traditional, computation-based math course.

Quizzes:

A quiz is given every week at the instructor's discretion. Generally you will be given 30 minutes at the *start* of class every Monday. The quizzes will focus on the computational skills practiced on the homework that was turned in the previous Wednesday. No notes or books may be used, but calculators are allowed. No make up quizzes, unless previously arranged, will be given, but I drop the lowest scoring quiz to give you some flexibility.

Papers:

There will be two 2-page papers due this term addressing one of the following questions:

1. What tools or rules should we use when approaching geometry questions?
2. Do we create or discover geometry?

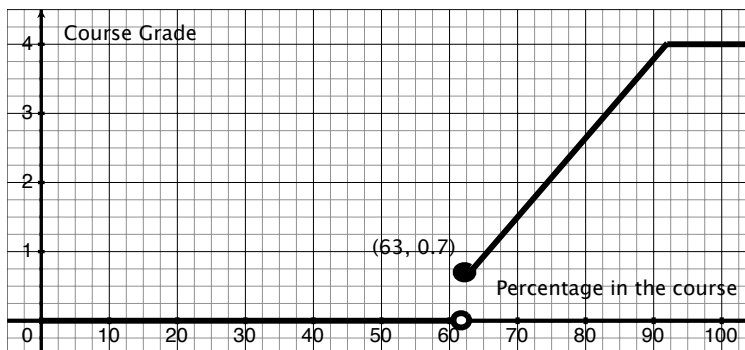
The first paper is a research paper due 2/16 during the 7th week of classes and the second paper is a persuasive paper due 3/7 during the 10th week of classes. More details, including the grading rubrics, will be provided in week 5.

Origami Project:

You have the choice to either create your own origami piece or create directions for a piece whose crease pattern is provided. The final piece, its crease pattern, and detailed instructions to fold it are due in week 10. Work directly related to this project will start in week 7 and more details, including the grading rubric, will be provided in week 6.

Grades: The following weights will be used to calculate your grade.

Journals	15%
Homework	15%
Quizzes	15%
Origami Project	10%
Papers	10%
Midterm	15%
Final	20%



The above grade assignment is based off the University of Washington, Tacoma's grading scale posted at <http://www.tacoma.washington.edu/enrollmentservices/grading.cfm>.

Outside Resources:

Come visit me if you have questions! If you are unable to attend my posted office hours but would like to meet, please let me know. I am willing to try and work with your schedule. Also remember that you are not alone in this class and your peers are a valuable (and often underutilized) resource.

The Teaching & Learning Center (TLC) is offering a number of additional instructional services that can help with writing *and* quantitative material. Complete information and hours are posted at: <http://www.tacoma.washington.edu/tlc/>. Also, don't forget about all the resources you learned about in the Fall during Core Lab!

Notes:

- I do *not* check my email after 4pm. Any questions sent to my email after 4pm may not receive a response until the next morning. The University's e-mail policy is posted at: http://www.tacoma.washington.edu/policies_procedures/E-mail_Policy.pdf
- Electronic devices should not be used during class. Activities that are non-relevant to the course, such as checking/sending email, playing games, and surfing the web, are considered disruptive activities when class is in session.
- Don't cheat and don't plagiarize. To plagiarize is to appropriate and to pass off, as one's own ideas, writing or works of another. Ignorance of proper documentation procedures is the usual cause of plagiarism. This ignorance does not excuse the act. Students are responsible for learning how and when to document and attribute resources used in preparing a written or oral presentation. For more information, please refer to the Academic Honesty: Cheating and Plagiarism document prepared by the Committee on Academic Conduct in the College of Arts and Sciences, UW Seattle: <http://depts.washington.edu/grading/issue1/honesty.htm>
- The University of Washington Tacoma is committed to making physical facilities and instructional programs accessible to students with disabilities. Disability Support Services (DSS) functions as the focal point for coordination of services for students with disabilities. In compliance with Title II of the Americans with Disabilities Act, any enrolled student at UW Tacoma who has an appropriately documented physical, emotional, or mental disability that "substantially limits one or more major life activities [including walking, seeing, hearing, speaking, breathing, learning, and working]," is eligible for services from DSS. If you are wondering if you may be eligible for accommodations on our campus, please contact the DSS reception desk at 692-4522. A complete description of services provided is posted at: http://www.tacoma.washington.edu/studentaffairs/SHW/dss_about.cfm
- Complete safety information and emergency procedures is available at <http://www.tacoma.washington.edu/security>.

The highlights are as follows:

- In case of fire, take your valuables, leave the building, and report to the parking lot next to the Library and across the street from the Mattress factory. Plan to return to class once the alarm has stopped.
- In case of an earthquake, DROP, COVER, and HOLD. Once the shaking stops, take your valuables, leave the building, and report to the parking lot next to the Library and across the street from the Mattress factory. Do not plan to return for the rest of the day.

In both of the above cases, do not return until you have received an all clear from somebody "official," the web or email.

- The Counseling Center offers short-term, problem-focused counseling to UW Tacoma students who may feel overwhelmed by the responsibilities of college, work, family, and relationships. Counselors are available to help students cope with stresses and personal issues that may interfere with their ability to perform in school. The service is provided confidentially and without additional charge to currently enrolled undergraduate and graduate students. To schedule an appointment, please call 692-4522 or stop by the Student Counseling Center (SCC), located in MAT 253.
- While I have attempted to make this syllabus as complete as possible, adjustments will be made throughout the course. Announcements will be made during class and it is the responsibility of the student to keep updated if class is missed.