Math 2890–3890, Math and Origami

Professor: Dr. Lisa Mantini, 410 Math Sciences
- ▷ Telephone: 405–744–5777,
- ▷ Email: lisa.mantini@okstate.edu,
- ▷ FAX number: 405–744–8275.
- ▷ Course Times: T 2:00–3:15 PM in 405 and 428 MSCS.
- ▷ Instructor's office hours: TBA.

Course Objectives: In these courses we will work at the area where Mathematics meets Origami, to help us develop an appreciation of both! We will create interesting objects and study their properties using tools from geometry, calculus, linear algebra, and symmetry.

Prerequisites: These classes are open to Honors students who are enrolled in a MATH class. Math 2890 is for students who are also enrolled in MATH 2163, Calculus III. MATH 3890 is for students enrolled in MATH 3013 or higher. No prior experience with origami is required, though the patience and precision to make very neat folds in paper is necessary.

Text: No text is required. I will provide you with handouts on origami constructions periodically. I can recommend some interesting books on origami if requested. See below for comments on project supplies.

Course Format: In this course we will meet once a week. Class periods will consist of folding activities and discussions of the relevant mathematics. Assignments may involve folding projects done independently, completion of folding projects begun in class, or mathematical work related to models we have constructed. There will be a final project consisting of creation of an origami model, a written discussion of its interesting mathematical properties, and an oral presentation to the class. Students in MATH 2890 will complete the final project individually or in pairs. Students in MATH 3890 will complete the final project individually.

Course requirements: In this course a total of 200 points are available, distributed as follows.

Item	Points Available	Total
Folding assignments	5–10 points each	75 points
Written assignments	5–15 points each	75 points
Final project, write-up, and presentation		50 points
Total		200 points

Project Storage: Students in this course will have card swipe access to our 3D printing lab, 421 MSCS. We will use a cabinet in 421 MSCS for storage of our projects and storage of origami supplies. Students may keep partially completed projects in 421 MSCS in between class periods and may work on projects in 421, if needed, during the week.

Project Supplies: Most often I will provide the paper supplies we need for our projects. Students who wish to have their own supplies might find that a cube of 3.4 in by 3.4 in memo paper from Staples is nice to have around. Some sort of sturdy, crush-proof box such as a file box with a handle might be useful for transporting projects from home to school. Alternatively, projects may be kept in our storage area in 421 MSCS.

Color printer: Occasionally during the course we may find that a color printer is useful. There is a color laser printer in 421 MSCS which may be accessed from the printers in that room. Students may log onto the computers in 421 MSCS using their Okey credentials.

Major Dates: Dates for the major course events are as follows:

> ▷ Last day to add or drop without charge: Tuesday, January 23
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> ▷ Spring break, no class: Tuesday, March 20
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> ▷ Last day to withdraw from a class: Friday, April 13
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> ▷ Last class period: Tuesday, May 1
>
> ▷ Final exam period (final projects presented): Tuesday, May 8, 2:00–3:50 PM