

MAT 118 Mathematical Thinking

Spring 2022 Tuesday, Thursday 1:15-2:35 Light Engineering 102

Instructor: Christiane Stidham Email: christiane.stidham@stonybrook.edu

Office hours:

Wednesday 1-2 Zoom (<http://www.math.stonybrook.edu/office-hours>)
Thursday 11-12 Math Learning Center (basement of Math building)
Thursday 12-1 ESS 338

Recitation R01: TA Matthew Huynh Wed 2:40-3:35 Frey 217
Email: matthew.huynh@stonybrook.edu
Recitation R02: TA Tobias Shin Mon 1:00-1:55 Harriman 111
Email: tobias.shin@stonybrook.edu
Recitation R03 : TA Tobias Shin Tue 4:45-5:40 Physics P116
Email: tobias.shin@stonybrook.edu

Text: *Excursions in Modern Mathematics* by Peter Tannenbaum, 8th, 9th or 10th edition, from Pearson. Homework exercises will come from the text but will also be provided separately.

The goal of this course is to develop mathematical thinking and the ability to manipulate various concepts, via the study of concrete, modern applications. The following topics will be covered:

- Symmetry (chapter 11: 6, 10, 18, 22, 26, 30)
- Paths (chapter 5: 18, 22, 30, 36, 44, 48, 50)
- Tours (chapters 6: 4, 10, 28, 36, 50)
- Population growth (chapter 9: 2, 8, 20, 26, 30, 38)
- Financial math (chapter 10)
- Graphs, charts, data sets (chapters 15, 17)
- Probability (chapter 16)

If we have time:

- Fractals, Fibonacci numbers and the golden ratio (chapters 12, 13)
- Voting and sharing (chapters 1-4)
- Scheduling (chapter 8)
- Collecting data (chapter 14)

- Homework and quizzes: 30% (in recitation, deadlines/policies from TA)
- Two Midterms: 20% each (in-class, March 3, April 7)
- Final Exam (cumulative): 30% (Monday May 16, 11:15am-1:45pm)

MAT 118: Development of quantitative thinking and problem solving abilities through a selection of mathematical topics: logic and reasoning; numbers, functions, and modeling; combinatorics and probability; growth and change. Other topics may include geometry, statistics, game theory, and graph theory. Through their engagement in problem solving, students develop an appreciation of the intellectual scope of mathematics and its connections with other disciplines.

Prerequisite: C or better in MAP 103 or level 2+ or higher on the mathematics placement examination (Prerequisite must be met within one year of beginning this course.)

DEC: C
SBC: QPS
3 credits

ACADEMIC INTEGRITY STATEMENT: Each student must pursue his or her academic goals honestly and be personally accountable for all submitted work. Representing another person's work as your own is always wrong. Faculty are required to report any suspected instance of academic dishonesty to the Academic Judiciary. For more comprehensive information on academic integrity, including categories of academic dishonesty, refer to the academic judiciary website at <http://www.stonybrook.edu/uaa/academicjudiciary/>.

STUDENT ACCESSIBILITY SUPPORT CENTER STATEMENT: If you have a physical, psychological, medical, or learning disability that may impact your course work, please contact Student Accessibility Support Center, ECC (Educational Communications Center) Building, Room 128, (631) 632-6748. They will determine with you what accommodations, if any, are necessary and appropriate. All information and documentation is confidential.

UNIVERSITY SUPPORT STATEMENT:

- To access mental health services, call Counseling and Psychological Services at 631-632-6720; Counselors are available to speak with 24/7.
- For updated information on the Academic Success and Tutoring Center please check www.stonybrook.edu/tutoring for the most up-to-date information.
- For IT Support: Students can visit the Keep Learning website at <https://sites.google.com/stonybrook.edu/keeplearning> for information on the tools you need for alternative and online learning.
- Need help? Report technical issues at <https://it.stonybrook.edu/services/itsm> or call 631-632-2358.
- For information on Library services and resources please visit the [Continuity of Library Operations](#) guide.
- **If you cannot reach your instructor, please email CAS_Dean@stonybrook.edu**

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