



DOANE
UNIVERSITY

SYLLABUS

Course Title	Problem Solving
Course Number	MTH 107
Number of Credits	3 semester credits
Course Dates	3/11/19 - 5/10/19
Instructor	Susan Hertzler
Email Address	susan.hertzler@doane.edu
Office Hours/Availability	See "Phone Number"
Phone Number	402.560.8560 In the event you need to contact me please send me a text message identifying yourself and your needs. In most cases I'll get back to you within 24 hrs.
Textbook Information: (e.g. title, edition, publisher, ISBN)	N/A
Additional Course Materials	Optional items you might find helpful: -graph paper -colored markers or pencils -four function calculator (most smartphones will suffice)
Course Description	This is a basic problem-solving course suitable for students in any major. A survey of a wide variety of problem solving strategies.

	Students successfully completing this course will effectively communicate mathematically, utilize various strategies in analyzing problems, and increase problem-solving persistence and sharpen problem-solving skills.
Foundational Area of Knowledge	<p>Foundational Area of Knowledge: Mathematical Reasoning</p> <p>Students will work to:</p> <ul style="list-style-type: none"> • analyze and model mathematical situations using a variety of techniques to solve problems effectively • communicate a clear understanding of conclusions • apply mathematical systems of thinking
Course Learning Outcomes/Objectives	<p>Problem solving is a very important part of learning mathematics. Good problem solving skills don't necessarily come naturally but can be taught. Students need many opportunities to practice problem-solving strategies, and they need to learn how to choose an appropriate strategy to solve a given problem. This course is designed to give students a firm problem-solving foundation. It also teaches them to think and work together, present solutions orally to the whole class, and write up detailed solutions. In other words, it helps to prepare them for life, as well as for future mathematics courses. Hence, written and oral communication skills are an important emphasis of the course.</p>
Technology Requirements	https://www.doane.edu/faq/minimum-computer-requirements

Course Schedule

Week or Module	Topic	Content	Assessments Matched to Learning Outcomes	Due Date & Time
1	Drawing Diagrams	<ul style="list-style-type: none"> • In-class example • In-class problems to be solved in small groups 	<ul style="list-style-type: none"> • Copied as presented • 7 problems of your choice 	<p>Session 1 End-of-Class</p> <p>Session 2 by 6pm</p>
2	Systematic Lists	<ul style="list-style-type: none"> • In-class example • In-class problems to be solved in small groups 	<ul style="list-style-type: none"> • 7 problems of your choice 	<p>Session 2 End-of-Class</p> <p>Session 3 by 6pm</p>
3	Eliminating Possibilities	<ul style="list-style-type: none"> • In-class example • In-class problems to be solved in small groups 	<ul style="list-style-type: none"> • 7 problems of your choice 	<p>Session 3 End-of-class</p> <p>Session 4 by 6pm</p>
4	Look For Patterns	<ul style="list-style-type: none"> • In-class example • In-class problems to be solved in small groups 	<ul style="list-style-type: none"> • 7 problems of your choice 	<p>Session 4 End-of-class</p> <p>Session 5 by 6pm</p>
5	Guess & Check	<ul style="list-style-type: none"> • In-class example • In-class problems to be 	<ul style="list-style-type: none"> • 7 problems of your choice 	<p>Session 5 End-of-class</p> <p>Session 6 by 6pm</p>

		solved in small groups		
6	Subproblems	<ul style="list-style-type: none"> • In-class example • In-class problems to be solved in small groups 	<ul style="list-style-type: none"> • 7 problems of your choice 	End-of-Class Session 7 by 6pm
7	Working Backwards	<ul style="list-style-type: none"> • In-class example • In-class problems to be solved in small groups 	<ul style="list-style-type: none"> • 7 problems of your choice 	End-of-Class Session 8 by 6pm
8	FINAL EXAM	<ul style="list-style-type: none"> • 14 Qstns • 7 Strategies 		Session 8 End-of-class Session 8 by End-of-class

Grading Assessments

Type of Assessment	Points	Total possible points
Journal Response	Completed/ Incomplete	Taken into consideration if final grade is between percentages
Weekly Assignments (7 Problems @ session)	10 points/per problem = 70 points/per session	490 Points

Final Exam (*7 Problems - Quality vs. Quantity)	70 points/per problem	490 Points
Out-of-Class Assignments	50%	

Grade Scale

A+ = 97-100% A = 94-96% A- = 90-93% B+ = 87-89% B = 84-86% B- = 80-83%
 C+ = 77-79% C = 74-76% C- = 70-73% D+ = 67-69% D = 64-66% D- = 60-63%
 F= 59% or below

Participation Policy	<p>Students are expected to be prompt and regularly attend on-ground classes in their entirety. Regular engagement is expected for on-line courses. Participation in class discussions is an integral part of your grade.</p> <p>In the event that you have two absences you will need to reschedule this course when you're able to attend at least 7 of the 8 sessions.</p>
Study Time	<p>Expectation of the amount of time the course requires students to spend preparing and completing assignments. Typically, students could expect to spend approximately 12 hours a week preparing for and actively participating in this 8-week 3 credit hour course. This actual time for study varies depending on students' backgrounds.</p>
Late Work	<p>In the event that an emergency arises and you are unable to complete/turn in your work when it is due please contact instructor as soon as possible.</p>
Submitting Assignments	<p>Outside of class assignments will be due by the beginning of the next class meeting.</p>
Communication Policy including Assignment Feedback	<p>Completed, outside of class assignments will be gone over at the beginning of the the next/subsequent class meeting - some exceptions apply. Generally, said assignments will be turned in, scored, recorded and returned to students by the end of the class that the work was turned in. Appropriate oral and/or written feedback will be given as well.</p>

Academic Integrity Policy	New Academic Integrity Policy to be released AUTM 2018
Academic Support	Please contact academicsupport@doane.edu https://www.doane.edu/graduate-and-adult/academic-support
Disability Services	https://www.doane.edu/disability-services Doane University supports reasonable accommodations to allow participation by individuals with disabilities. Any request for accommodation must be initiated by the student as soon as possible. Each student receiving accommodations is responsible for his or her educational and personal needs while enrolled at Doane University. Please contact Cuddy MacNeill at cuddy.macneill@doane.edu or 402-467-9031 for assistance.
Military Services	https://www.doane.edu/graduate-and-adult/military
Anti-Harassment Policy	http://catalog.doane.edu/content.php?catoid=5&navoid=452
Grade Appeal Process	http://catalog.doane.edu/content.php?catoid=5&navoid=238
Credit Hour Definition	Doane University follows the federal guideline defining a credit hour as one hour (50 minutes) of classroom or direct faculty instruction and a minimum of two hours of out-of-class student work each week for approximately fifteen weeks (one semester), or the equivalent amount of work over a different time period (e.g., an 8-week term). This definition applies to courses regardless of delivery format, and thus includes in-person, online, and hybrid courses (combination of in-person and online). It also applies to internship, laboratory, performance, practicum, research, student teaching, and studio courses, among other contexts.
Syllabus Changes	Circumstances may occur which require adjustments to the syllabus. Changes will be made public at the earliest possible time.

