

Welcome to Math 50!

What is the course about?

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- **Linear and logistic regression models** are the mathematical frameworks for achieving this.

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Comparison to other courses

• This course is designed to be a **comprehensive** introduction to the field of computer science, covering a wide range of topics from programming to algorithms and data structures.

• It is intended to provide students with a **solid foundation** in the principles and concepts of computer science, as well as the skills necessary to apply this knowledge in practical settings.

• The course is structured to be **challenging** and **engaging**, with a focus on hands-on learning and problem-solving. Students will be encouraged to think critically and creatively, and to work together to solve complex problems.

• The course is designed to be **flexible** and **adaptable**, allowing students to tailor their learning experience to their own interests and needs. This includes the opportunity to explore advanced topics and to engage in research projects.

• The course is intended to be a **preparation** for further study in computer science, as well as for careers in the field. It provides students with the knowledge and skills necessary to succeed in a rapidly changing and competitive industry.

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	Topic	Overlap
Week 1	Discrete probability models and simulations	10, 20, 40, 60
Week 2	Sums and CLT	20, 40, 60
Week 3	Inference	40, 70
Week 4	Regression single predictor	10
Week 5	Regression with multiple predictors	70
Week 6	Relationship to other models, Logistic regression	70
Week 7	Overfitting and regularization	70
Week 8	Bayesian inference	

[Table](#): Weekly schedule (see course webpage for details)

Resources

Course structure

1. Introduction

2. Linear algebra

3. Calculus

4. Probability

5. Statistics

6. Optimization

7. Machine learning

8. Deep learning

9. Reinforcement learning

10. Conclusion

Policies

1990-2000

2000-2010

2010-2020

2020-2030

2030-2040

2040-2050

2050-2060

2060-2070

2070-2080

2080-2090

2090-2100

How to succeed in this course



What to expect from me

- **Availability:** Office hours and xhours (4 hours total outside of class)
- **Responsiveness:** 24 hours on weekdays. If you'd like to request an extension, plan ahead
- **Grading:** No detailed grading of problem sets (graders will review for completeness). Detailed grading of midterm within 1 week.
- **Material:** Course notes should be understood as a summary of material covered. Refer to textbooks/readings for technical details.