

MTH104  
Professor Fine  
Spring 2009  
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## Syllabus

*Elementary Statistics* Larson & Farber (Custom Ed. for UMass Dartmouth)

### Week of 1/26:

Introduction  
Populations, samples, sampling techniques, data  
Statistics vs. parameters – *Friday is last day to Add/Drop/Audit*

### Week of 2/2:

Describing data:  
Tables – frequency distributions  
Graphs – histograms, pie charts, Pareto charts  
Summary numerical descriptions:  
Mean, median, mode

### Week of 2/9:

Weighted means, means from frequency distributions  
Range, (sample) variance, (sample) standard deviation

### Week of 2/16:

**Presidents' Day** – *Tuesday follows Monday schedule*  
Bell curves, Chebychev's Theorem  
Fractiles, quartiles, percentiles  
**Exam I**

### Week of 2/23:

Probability:  
Definitions  
Conditional probability & independence  
Multiplication rule – *Friday is last day to file Pass/Fail*

### Week of 3/2:

Counting sets  
Addition rule  
Permutations & combinations

### Week of 3/9:

Discrete probability distributions  
Mean, variance & standard deviations of a probability distribution  
Binomial, geometric & Poisson distributions

### Week of 3/16: Spring vacation

**Week of 3/23:**

*Monday is mid-semester*

**Exam II**

Continuous probability distributions:

The standard normal probability distribution

Calculating probabilities of normally-distributed random variables

**Week of 3/30:**

Sampling distributions

The Central Limit Theorem

**Week of 4/6:**

The normal approximation to the binomial

– *Friday is last day to withdraw*

**Week of 4/13:**

Drawing conclusions from sample data:

Confidence intervals

Mean & the  $t$ -distribution

Mean with unknown variance, proportion

**Exam III**

**Week of 4/20:**

**Patriots' Day**

Variance & the  $\chi^2$ -distribution

One-sample hypothesis testing:

Null hypothesis

Type I & Type II errors

**Week of 4/27:**

Two-sample hypothesis testing:

$z$ -test for two means of large samples

$t$ -test for two means of small samples

**Week of 5/4:**

Independence

Correlation

Linear regression

**Week of 5/11:**

**Exam IV** – *Monday is our last class, and we have no final.*