The course MT004 is a University core course in mathematics for students in the College of Arts and Sciences, School of Education, and School of Nursing.

Academic Integrity
As with all courses, please refer to and comply with the Universities Academic Integrity policies provided at http://www.bc.edu/offices/stserv/academic/resources/policy.html. These policies are important and are taken seriously at Boston College.

Course Description
Finite Probability is an introduction to probability and includes elements of set theory, combinatorics, and the basic concepts of finite probability and statistics. Emphasis in each of the topic areas will be placed on problem solving.

Required Text
Finite Mathematics and Its Applications, Second Custom Edition for Boston College by Larry Goldstein, David Schneider, and Martha Siegel.

Exams
There will be three 50 minute exams (in class) tentatively on October 5, November 7, and December 5. Dates for these exams will be confirmed a week in advance. For each of these exams you may prepare and use one double-sided page (8.5x11) of notes. Calculators may be used during these exams but no other electronic devices are permitted.

Final Exam: Monday, December 19 at 9:00 am. This date and time is non-negotiable. Please plan your holiday travel accordingly.

Cheating on any exam will result in a failing grade for the course!

Makeup Policy
A make-up is never guaranteed. If you are forced to miss an exam for a legitimate reason, please inform me before the scheduled exam if this is at all possible, and otherwise as soon as it is feasible for you to do so, by phone or by e-mail. Unnecessary delay will diminish your chances of being allowed a make-up. Some form of written proof may be required from you later, such as a note sent from your Dean’s office. (In some cases, a note from the infirmary may not be detailed enough to suffice.) Important: It is your responsibility to see that personal travel plans, including any plans your parents make for you, do not conflict with exam dates. In particular, the final exam cannot be taken early.

Devices During class no cell phones or other electronic devices are to be used including laptops. Please ensure that your cell phones are silenced or turned off prior to the start of class.

Homework
Unless otherwise indicated by the professor, homework should be submitted at the beginning of class on the day that it is due. Homework will be assigned approximately once a week to be due on
that day the following week.

**Grade**
Your grade will be based on the weighted average of your exam and homework scores, according to this formula: 17% homework, 51% in-class exams (17% each) and 32% final.

While participation and attendance are not explicitly factored into your grade, they are immensely important to mastering the material. Additionally, they will be taken into consideration when making borderline final grade decisions.

**General Remarks**
Be responsible for your own learning! This can’t be stressed enough. It is up to you to find the best way to assimilate these ideas. Read the text, read your notes and think about the concepts as much as you can. It is better to study often in small doses than infrequently for long periods. And it is not enough just to sit down and do the homework problems. Do not assume I will cover everything in class, or that I will follow the presentation in the text.

**Schedule**
The schedule below is a guide that will be adjusted as needed. Occasionally assignments below will be subject to change or modified to accommodate class content.

<table>
<thead>
<tr>
<th>Chapter 5</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Sept 7</td>
<td>Introduction and Expectations</td>
</tr>
<tr>
<td>Sept 9</td>
<td>5.1 Sets</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Sept 12</td>
<td>5.2 Inclusion-Exclusion Principle, Venn Diagrams</td>
</tr>
<tr>
<td>Sept 14</td>
<td>5.2 Venn Diagrams, De Morgan’s Laws</td>
</tr>
<tr>
<td>Sept 16</td>
<td>5.3 Venn Diagrams and Counting</td>
</tr>
<tr>
<td></td>
<td>Assignment: p. 222: 14, 16, 22, 31, 57 - 60, 65</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Sept 19</td>
<td>5.4 The Multiplication Principle</td>
</tr>
<tr>
<td>Sept 21</td>
<td>5.4 The Multiplication Principle</td>
</tr>
<tr>
<td>Sept 23</td>
<td>5.5 Permutations and Combinations</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Sept 26</td>
<td>5.5 Permutations and Combinations</td>
</tr>
<tr>
<td>Sept 28</td>
<td>5.6 Further Counting Problems</td>
</tr>
</tbody>
</table>
Sept 30 5.7 Binomial Theorem
Assignment: p. 248: 20, 21, 25, 29, 33, 34

Oct 3 Wrap up and Review

Oct 5 Exam #1: Chapter 5 (through 5.7)

Oct 7 5.8 Multinomial Coefficient
Assignment: p. 253: 9, 13, 15, 17, 21
p. 270: 1, 6, 13 - 15, 17, 22

Oct 10 No Classes

Chapter 6
Oct 12 6.1, 6.2 Probability Basic Terminology

Oct 14 6.3 Assignment of Probabilities
Assignment: p. 281: 1, 5, 7, 10, 16
p. 282: 15, 17, 18, 25, 26, 32
p. 288: 7, 8, 11 - 14, 27, 43

Oct 17 6.3, 6.4 Assignment of Probabilities

Oct 19 6.4 Calculating Probabilities of Events

Oct 21 6.4 The Birthday Problem and Duplication Probability
Assignment: p. 299: 6, 9, 11, 15, 19, 24, 34
p. 309: 3, 5, 10 - 12

Oct 24 6.5 Conditional Probability and Independence

Oct 26 6.6 Tree Diagrams

Oct 28 6.6 Tree Diagrams
Assignment: p. 310: 16 - 18, 24, 29
p. 315: 1 - 3, 5, 8, 9

Oct 31 6.7 Bayes’ Theorem

Nov 2 Wrap Up and Review

Chapter 7
Nov 4 7.1 Representing Data

Nov 7 Exam #2: Chapter 5 (5.8 Only), Chapter 6

Nov 9 7.2 Probability Distributions
Nov 11 7.2 Probability Distributions

Nov 14 7.3 Binomial Trials

Nov 16 7.3 Binomial Trials
Assignment: p. 355: 17, 21, 24, 31, 34
p. 364: 2, 3, 5, 7, 11, 13
p. 365: 15, 16, 22, 23, 25, 29

Nov 18 7.4 The Mean

Nov 21 7.4 The Mean

Nov 23 No Classes

Nov 25 No Classes

Nov 28 7.5 Variance and Standard Deviation
Assignment: p. 373: 1, 4, 5, 6, 8, 9, 11
p. 374: 12, 13, 15, 22, 25

Nov 30 7.5 Variance and Standard Deviation

Dec 2 Wrap up and Review

Dec 5 Exam #3: Chapter 7 (Through 7.5)

Dec 7 7.6 The Normal Distribution
Suggested Problems: p. 387: 2, 4, 6, 8, 9, 11, 15, 18
p. 388: 19, 21, 23, 28, 34, 36

Dec 9 7.6 The Normal Distribution