

**COURSE INFORMATION SHEET**  
Fall 2008

**1. STAT 211 - Concepts of Statistics**

| Lecture | Days | Time  | Location | Instructor   | Office | Phone    |
|---------|------|-------|----------|--|--------|----------|
| L01     | MWF  | 11:00 | ST 145   | M. Fenyvesi<br>email: <a href="mailto:fenyvesi@math.ucalgary.ca">fenyvesi@math.ucalgary.ca</a> | MS 468 | 220-3965 |
| T01     | T    | 10:00 | MS 569   | M. Fenyvesi  |        |          |
| T02     | T    | 10:00 | MS 319   | Beilei Wu<br>email: <a href="mailto:bewu@ucalgary.ca">bewu@ucalgary.ca</a>                     | MS 354 | 220-3943 |
| T03     | T    | 11:00 | MS 569   | M. Fenyvesi  |        |          |
| T04     | T    | 11:00 | MS 319   | Beilei Wu  |        |          |

**2. Prerequisites:** Pure Mathematics 30 or equivalent

**NOTE:** The Faculty of Science policy on pre- and co-requisite checking is outlined in the current University Calendar (see [www.ucalgary.ca/pubs/calendar](http://www.ucalgary.ca/pubs/calendar)) *Faculty of Science, section 5C*. **It is the students' responsibility to ensure that they have the pre- and co-requisites for the course, and if they do not they will be withdrawn from the course without notice.**

**3. Fee policy.** After the last day to drop/add courses, there will be no refund of tuition fees if a student withdraws from a course, courses or the session.

**4. Academic Accommodations:** It is the student's responsibility to request academic accommodations. A student with a documented disability who may require academic accommodation must register with the Disability Resource Centre to be eligible for formal academic accommodation. DRC registered students are required to discuss their needs with the instructor no later than fourteen (14) days after the start of this course.

**5. The University policy on grading and related matters** is described in the current University Calendar, *Academic Standings*. In determining the overall grade in the course, the following weights will be used:

|                       |     |
|-----------------------|-----|
| Quizzes – best 4 of 5 | 25% |
| Mid-term exam         | 25% |
| Final Exam            | 50% |

A passing grade on the 75% of the weight assigned to the combined mid-term/final component may be necessary to pass the course as a whole. There will be a final examination scheduled by the Registrar's Office. Exams and quizzes will be closed book. Calculators are permitted for arithmetic calculations. Tables will be provided.

**6. Missed Components of Term Work.** The regulations of the Faculty of Science pertaining to this matter are outlined in the 2008-2009 Calendar, Faculty of Science, section 6A. It is the student's responsibility to familiarize herself/himself with these regulations.

**7. Academic misconduct** (cheating, plagiarism, or any other form) is a very serious offence that will be dealt with rigorously in all cases. A single offence may lead to disciplinary probation or suspension or expulsion. The Faculty of Science follows a zero tolerance policy regarding dishonesty. Please read the sections of the current University Calendar. See: <http://www.ucalgary.ca/honesty/>

**8. There will be no out-of-class activities.**

Date: \_\_\_\_\_

Department approval \_\_\_\_\_

**Textbook**

Statistics, Fourth Edition, by Freedman, Pisani and Purves, W.W. Norton & Co. Publication.

**9. Academic Schedule**

|   |                    |   |
|---|--------------------|---|
| Sept 8                                      | Monday             | Lectures begin.   |
| Sept 9                                      | Tuesday            | No lab.   |
| Sept 19<br>for withdrawals after this date. | Friday             | Last day to change registration in Fall session courses. No fee refunds |
| Oct 13                                      | Monday             | Thanksgiving Day. University closed                                     |
| <b>Oct 31</b>                               | <b>Friday</b>      | <b>Mid-term Examination</b>   |
| Nov. 8 – 11                                 | Sat – Tue          | Reading days. No lectures.  |
| Dec 5                                       | Friday             | Last day of lectures.   |
| December 8 - 17                             | Monday - Wednesday | Final Examination Period  |

**11. Quiz Schedule**

|              |         |        |
|--------------|---------|--------|
| September 23 | Tuesday | Quiz 1 |
| October 7    | Tuesday | Quiz 2 |
| October 21   | Tuesday | Quiz 3 |
| November 18  | Tuesday | Quiz 4 |
| December 2   | Tuesday | Quiz 5 |

**12. Course Content**

|          |   |  |
|----------|---|--|
| Part I.  | Design of Experiments<br>Chapter 1.<br>Chapter 2. | Controlled Experiments<br>Observational Studies                                      |
| Part II. | Descriptive Statistics<br>Chapters 3-6.           | Histogram, Averages, Standard Deviation, Normal, Measurement Error.                  |
| Part IV. | Probability<br>Chapters 13-15.                    | Chance, Binomial   |
| Part V.  | Chance Variability<br>Chapters 16-18.             | The Law of Averages, Expected Value, Normal Approximation to Probability Histograms. |
| Part VI. | Sampling<br>Chapters 19-21, 23.                   | Sample Surveys, Chance Error in Sampling, The Accuracy of Percentages and Averages.  |

|            |  |  |
|------------|--|--|
| Part VII.  | Chance Models<br>Chapter 24.   | Model for Measurement Error                                  |
| Part VIII. | Test of Significance<br>Chapters 26, 27 (sections 1 & 2), 28, 29 (as summary only) | Tests of Significance, including the t-Test, Chi-square Test |
| Part III.  | Correlation and Regression<br>Chapters 8, 9, 10 (sections 1-4).                    |  |

### 13. Attendance

It is important to attend all lectures and tutorials, as this course, like other mathematics and statistics courses, makes use of earlier material in following chapters. Do not fall behind in this class.

### 14. Support Materials

On non-quiz tutorials, worksheets will be handed out with problems to work on during the tutorial period. The text has solutions to exercises, except for the Review Exercises. Solutions to most of these are available for purchase from the Bound and Copied, in MacEwan Centre.

### 15. Office hours

Office hours are Mondays 12:30 – 14:00. I will be available during office hours or you may make an appointment, if you prefer, or just drop by my office.

### 16. Nature of the Course

There are some mathematical aspects to this course, but the emphasis will not be on proofs and memorization of formulas. Rather, the emphasis will be on understanding concepts and real life applications, the models that underlie statistical inference and thinking about statistical issues. Examples show how statistics has been used to help solve problems in many fields.

### 17. Exercises for “Statistics”, Fourth Edition, by Freedman, Pisani and Purves

|                                |                                  |                       |
|--------------------------------|----------------------------------|-----------------------|
| <b>Read Chapters 1 &amp; 2</b> | Exercise Set A, page 20          | #1 - 7, 9, 10, 13, 14 |
|                                | <b>Review Exercise</b> , page 24 | #1, 3 - 5, 9, 10      |
| <b>Read Chapter 3</b>          | Exercise Set A, page 33          | #1 – 4, 7, 8          |
|                                | Exercise Set B, page 38          | #1, 2                 |
|                                | Exercise Set C, page 41          | #1, 2, 4              |
|                                | Exercise Set D, page 44          | #1                    |
|                                | Exercise Set E, page 46          | #1                    |
|                                | <b>Review Exercise</b> , page 50 | #2, 4, 5, 7, 9        |

|                        |  |                       |
|------------------------|--|-----------------------|
| <b>Read Chapter 4</b>  | Exercise Set A, page 60                    | #2, 4 - 6, 8          |
|                        | Exercise Set B, page 65                    | #1 - 5                |
|                        | Exercise Set C, page 67                    | #2, 3, 5              |
|                        | Exercise Set D, page 70                    | #3 - 6, 8             |
|                        | Exercise Set E, page 72                    | #1, 3 - 5, 8, 11, 12  |
|                        | <b>Review Exercise</b> , page 74           | #4, 6, 9              |
| <b>Read Chapter 5</b>  | Exercise Set A, page 82                    | #2                    |
|                        | Exercise Set B, page 84                    | #1, 4                 |
|                        | Exercise Set C, page 88                    | #2                    |
|                        | Exercise Set D, page 89                    | #5                    |
|                        | Exercise Set E, page 92                    | #1, 2                 |
|                        | <b>Review Exercise</b> , page 93           | #1, 2, 4, 5, 8, 9, 11 |
| <b>Read Chapter 6</b>  | <b>Review Exercise</b> , page 104          | #3, 4                 |
|                        | <b>Special Review Exercises</b> , page 105 | #2, 3, 6, 9, 10       |
| <b>Read Chapter 13</b> | Exercise Set A, page 225                   | #1 - 3, 5             |
|                        | Exercise Set B, page 227                   | #1 - 4                |
|                        | Exercise Set C, page 229                   | #1 - 4, 7             |
|                        | Exercise Set D, page 232                   | #1, 3, 5              |
|                        | <b>Review Exercise</b> , page 234          | #2, 3, 5 - 7, 12      |
| <b>Read Chapter 14</b> | Exercise Set A, page 240                   | #3, 4                 |
|                        | Exercise Set B, page 242                   | #2 - 6                |
|                        | Exercise Set C, page 246                   | #1 - 5                |
|                        | Exercise Set D, page 250                   | #3 - 5                |
|                        | <b>Review Exercise</b> , page 252          | #3 - 8, 12            |
| <b>Read Chapter 15</b> | Exercise Set A, page 258                   | #3 - 5                |
|                        | <b>Review Exercise</b> , page 261          | #2, 4, 9, 10          |
| <b>Read Chapter 16</b> | Exercise Set A, page 277                   | #1 - 7                |
|                        | Exercise Set B, page 280                   | #2, 4, 6              |
|                        | Exercise Set C, page 284                   | #1, 2                 |
|                        | <b>Review Exercise</b> , page 285          | #1 - 7                |
| <b>Read Chapter 17</b> | Exercise Set A, page 290                   | #1, 3, 4              |
|                        | Exercise Set B, page 293                   | #1, 3, 4, 6           |
|                        | Exercise Set C, page 296                   | #3 - 6                |
|                        | Exercise Set D, page 299                   | #3                    |
|                        | Exercise Set E, page 303                   | #2, 5, 7              |
|                        | <b>Review Exercise</b> , page 304          | #2, 4, 5, 11, 13      |
| <b>Read Chapter 18</b> | Exercise Set A, page 312                   | #2, 3, 5              |
|                        | Exercise Set B, page 318                   | #2, 3, 6              |
|                        | Exercise Set C, page 324                   | #2, 5, 6              |
|                        | <b>Review Exercise</b> , page 327          | #2, 4, 9, 11          |
| <b>Read Chapter 19</b> | Exercise Set A, page 349                   | #4, 5, 8, 12          |
|                        | <b>Review Exercise</b> , page 351          | #2, 5, 9              |
| <b>Read Chapter 20</b> | Exercise Set A, page 361                   | #2, 4                 |
|                        | Exercise Set B, page 366                   | #1, 2, 4              |
|                        | Exercise Set C, page 370                   | #1, 2, 3              |
|                        | <b>Review Exercise</b> , page 371          | #3, 6, 7, 12          |

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|---|--|------------------------------|--|
| <b>Read Chapter 21</b>                      | Exercise Set A, page 379                   | #4, 7, 8                     |  |
|   | Exercise Set B, page 383                   | #2, 3                        |  |
|   | Exercise Set C, page 386                   | #4 – 7                       |  |
|   | Exercise Set D, page 388                   | #2                           |  |
|   | Exercise Set E, page 390                   | #2                           |  |
|   | <b>Review Exercise</b> , page 391          | #2, 5, 7, 10                 |  |
| <b>Read Chapter 23</b>                      | Exercise Set A, page 413                   | #4, 5, 9                     |  |
|   | Exercise Set B, page 420                   | #2, 4, 5, 7                  |  |
|   | Exercise Set C, page 423                   | #2, 3, 6                     |  |
|   | Exercise Set D, page 424                   | #1, 2, 6                     |  |
|   | <b>Review Exercise</b> , page 425          | #1 - 5                       |  |
|   | <b>Special Review Exercises</b> , page 428 | #1, 5, 6, 13, 18, 20, 26, 30 |  |
| <b>Read Chapter 24</b>                      | Exercise Set A, page 444                   | #3, 4                        |  |
|   | Exercise Set B, page 449                   | #2, 5                        |  |
|   | Exercise Set C, page 452                   | #1, 4, 7                     |  |
|   | <b>Review Exercise</b> , page 455          | #1, 2, 9                     |  |
| <b>Read Chapter 26</b>                      | Exercise Set A, page 476                   | #2 - 5                       |  |
|   | Exercise Set B, page 478                   | #5                           |  |
|   | Exercise Set C, page 481                   | #1, 2, 4                     |  |
|   | Exercise Set D, page 482                   | #1, 2, 3                     |  |
|   | Exercise Set E, page 486                   | #7 – 9                       |  |
|   | Exercise Set F, page 494                   | #4 – 7                       |  |
|   | <b>Review Exercise</b> , page 495          | #2, 5, 6, 8, 9               |  |
| <b>Read Chapter 27 - Sections 1 &amp; 2</b> | Exercise Set A, page 503                   | #6                           |  |
|   | Exercise Set B, page 506                   | #2                           |  |
| <b>Read Chapter 28</b>                      | Exercise Set A, page 531                   | #3 - 6                       |  |
|   | Exercise Set C, page 539                   | #2, 3                        |  |
|   | <b>Review Exercise</b> , page 540          | #2, 3, 7                     |  |
| <b>Read Chapter 8</b>                       | Exercise Set A, page 122                   | #5, 6                        |  |
|   | Exercise Set B, page 128                   | #1, 7, 8                     |  |
|   | Exercise Set C, page 131                   | #3                           |  |
|   | Exercise Set D, page 134                   | #1 (a)                       |  |
|   | <b>Review Exercise</b> , page 134          | #1, 4, 5, 7                  |  |
| <b>Read Chapter 9</b>                       | Exercise Set A, page 143                   | #2 - 5, 7                    |  |
|   | Exercise Set B, page 145                   | #3                           |  |
|   | Exercise Set C, page 148                   | #1                           |  |
|   | Exercise Set D, page 149                   | #2                           |  |
|   | Exercise Set E, page 152                   | #3                           |  |
|   | <b>Review Exercise</b> , page 153          | #2, 4, 7, 8                  |  |
| <b>Read Chapter 10 Sections 1 – 4</b>       | Exercise Set A, page 161                   | #2, 3, 4                     |  |
|   | Exercise Set B, page 163                   | #1                           |  |
|   | Exercise Set C, page 167                   | #1, 2                        |  |
|   | Exercise Set D, page 174                   | #1, 2, 3                     |  |
|   | <b>Review Exercise</b> , page 176          | #2, 4(a), 5, 7               |  |