

# SM316 ENGINEERING MATH WITH PROBS & STATS

## SYLLABUS (Change 1)

### Fall Semester 2006-2007

Textbooks: (1) *Probability and Statistics for Engineers and Scientists*, 8th Ed., Walpole, Myers, Myers & Ye, Pearson/Prentice Hall, 2007, (2) *Advanced Engineering Mathematics*, 6th Ed., Peter V. O'Neil, Thomson-Brooks/Cole, 2007.

| DAY                                     | DATE  | SECTION & TOPIC                                      | PROBLEMS                        | NOTES   |
|---|-------|--|---------------------------------|---------|
| 1 Mon                                   | 8/21  | 2.1,2.2,2.4 Sets and Probability                     | p. 38 # 2.1, 2.2,2.3            |         |
| 2 Wed                                   | 8/23  | 2.4, 2.5 Probability of Events, Additive Rules       | p. 55 # 2.51, 2.52, 2.53        |         |
| 3 Fri                                   | 8/25  | 2.5, 2.6 Additive Rules, Conditional Probability     | p. 65 # 2.77, 2.78              |         |
| 4 Mon                                   | 8/28  | 2.6 Conditional Probability and Multiplicative Rules | p. 65 # 2.81, 2.86, 2.94        |         |
| 5 Wed                                   | 8/30  | 3.1, 3.2 Discrete RV's and Pdf's                     | p. 88 3.1, 3.2, 3.5(a)          |         |
| 6 Fri                                   | 9/01  | 3.3 Continuous RV's and Pdf's                        | p. 88, 3.7, 3.9                 |         |
| <b>→ Mon 9/04 Labor Day Holiday</b>     |       |  |                                 |         |
| 7 Tue                                   | 9/05  | 4.1 Mean of a RV                                     | p. 113 # 4.2, 4.4, 4.8          |         |
| 8 Wed                                   | 9/06  | 4.2 Variance   | p. 122 # 4.33, 4.34, 4.37, 4.43 |         |
| 9 Fri                                   | 9/08  | 4.3 Linear Combinations                              | p. 134 # 4.51, 4.55, 4.56       |         |
| 10 Mon                                  | 9/11  | 5.1-5.3 Binomial Distribution                        | p. 150 # 5.1, 5.2, 5.3          |         |
| 11 Wed                                  | 9/13  | 6.1 Continuous Uniform Distribution                  | p. 185 # 6.20, 6.21, 6.22       |         |
| 12 Fri                                  | 9/15  | 6.2,6.3 Normal Distribution                          | p. 185 # 6.1, 6.3, 6.5          |         |
| 13 Mon                                  | 9/18  | 6.3 Normal Distribution                              | p. 185 # 6.7                    |         |
| 14 Wed                                  | 9/20  | 6.4 Applications                                     | p. 185 # 6.12, 6.14             |         |
| 15 Fri                                  | 9/22  | Review   |                                 |         |
| 16 Mon                                  | 9/25  | EXAM I   |                                 | AcResWk |
| 17 Wed                                  | 9/27  | 8.1, 8.2 Sample Means, Variance                      | p. 234 # 8.1, 8.2, 8.3          | AcResWk |
| 18 Fri                                  | 9/29  | 8.4,8,5 Sampling Distributions                       | p. 251 # 8.19, 8.20             | AcResWk |
| 19 Mon                                  | 10/02 | 8.5 Central Limit Theorem                            | p. 251 # 8.22                   |         |
| <b>→ Tue 10/03 Six Week Grades Due</b>  |       |  |                                 |         |
| 20 Wed                                  | 10/04 | 8.6 Sampling Distributions of S-squared              | p. 265 # 8.44                   |         |
| 21 Fri                                  | 10/06 | 8.7 T-Distribution                                   | p. 265 # 8.46, 8.47             |         |
| <b>→ Mon 10/09 Columbus Day Holiday</b> |       |  |                                 |         |
| 22 Wed                                  | 10/11 | 8.7 T-Distribution                                   | p. 265 # 8.48, 8.50             |         |
| 23 Fri                                  | 10/13 | 9.4 Estimating $\mu$ ( $\sigma$ Known)               | p. 285 # 9.4,9.5,9.7            |         |
| 24 Mon                                  | 10/16 | 9.4 Estimating $\mu$ ( $\sigma$ Known)               | p. 285 # 9.8, 9.9               |         |
| 25 Wed                                  | 10/18 | 9.4 Estimating $\mu$ ( $\sigma$ Unknown)             | p. 285 # 9.13,9.15,9.16         |         |
|   |       | 9.5 Standard Error                                   |                                 |         |
| 26 Fri                                  | 10/20 | Review   |                                 |         |
| 27 Mon                                  | 10/23 | EXAM II  |                                 |         |

| DAY          | DATE         | SECTION & TOPIC                                     | PROBLEMS                     | NOTES          |
|--------------|--------------|---|------------------------------|----------------|
| 28 Wed       | 10/25        | Fourier Series Review                               | Work Sheet                   |                |
| 29 Fri       | 10/27        | Fourier Sin/Cos Series Review                       | Work Sheet                   |                |
| 30 Mon       | 10/30        | 20.1 Complex Numbers                                | p. 921 # 1-14, 17,18,23,21   | AcResWk        |
| 31 Wed       | 11/01        | 20.1 Complex Numbers and Roots of Unity             | p. 921 # 10-14, 17,18,23, 27 | AcResWk        |
| 32 Fri       | 11/03        | 14.7 Complex Fourier Series                         | p. 635 #1                    | AcResWk        |
| 33 Mon       | 11/06        | 14.7 Complex Fourier Series                         | p. 635 # 2                   |                |
| <b>→ Tue</b> | <b>11/07</b> | <b>Twelve Week Grades Due</b>                       |                              |                |
| 34 Wed       | 11/08        | 14.7 CFS and Frequency Spectra                      | p. 635 # 3,9                 |                |
| 35 Mon       | 11/13        | 14.7 CFS and Frequency Spectra                      | p. 635 (Problem in class)    |                |
| 36 Wed       | 11/15        | 15.3 Complex Fourier Transform                      | p. 632 # 11                  |                |
| 37 Fri       | 11/17        | 15.3 Inverse CFT, Represent fcn as Fourier Integral | p. 632 # 13                  |                |
| 38 Mon       | 11/20        | 15.3 Represent fcn as a FI                          | p. 632 (Problem in class)    |                |
| 39 Wed       | 11/22        | 15.3 CFT and Frequency Spectra                      | p. 632 # (Problem in class)  | Early Schedule |
| <b>→ Fri</b> | <b>11/24</b> | <b>Thanksgiving Holiday</b>                         |                              |                |
| 40 Mon       | 11.27        | Review  |                              |                |
| 41 Wed       | 11.29        | EXAM III  |                              |                |
| 42 Fri       | 12/01        | Final Review  |                              |                |
| 43 Mon       | 12/04        | Final Review  |                              |                |
| 44 Wed       | 12/06        | Final Review  |                              | SOFs           |