**MCB 315: Quantitative Biology**
**Fall 2018**

| Week | Session | Date | Topic |
|---|---|---|---|
| 1 | 1 | Tue, Aug 21 | Intro to course |
| | 2 | Thu, Aug 23 | Estimation, units, log-scales, history of life on Earth |
| 2 | 3 | Tue, Aug 28 | Functions on a log-scale |
| | 4 | Thu, Aug 30 | Matlab tutorials |
| 3 | 5 | Tue, Sep 4 | Counting sequences |
| | 6 | Thu, Sep 6 | Mendelian genetics |
| 4 | 7 | Tue, Sep 11 | Wright-Fisher neutral model - neutral |
| | 8 | Thu, Sep 13 | Wright-Fisher model - selection |
| 5 | 9 | Tue, Sep 18 | Exponential and Poisson distributions |
| | 10 | Thu, Sep 20 | Molecular motors |
| 6 | 11 | Tue, Sep 25 | Stochastic simulation with mass action kinetics |
| | 12 | Thu, Sep 27 | Probability review |
| 7 | 13 | Tue, Oct 2 | Cancer incidence statistics |
| | 14 | Thu, Oct 4 | **Checkpoint quiz** |
| 8 | 15 | Tue, Oct 9 | ODE simulation and HIV replication |
| | 16 | Thu, Oct 11 | Transcription network modeling |
| 9 | 17 | Tue, Oct 16 | The cell cycle |
| | 18 | Thu, Oct 18 | Lateral Inhibition |
| 10 | 19 | Tue, Oct 23 | Significance testing |
| | 20 | Thu, Oct 25 | Genome-wide association / multiple testing |
| 11 | 21 | Tue, Oct 30 | Epidemiological modeling |
| | 22 | Thu, Nov 1 | **Checkpoint quiz** |
| 12 | 23 | Tue, Nov 6 | Review for comprehensive exam (Prof. Gutenkunst away) |
| | 24 | Thu, Nov 8 | HIV replication and mutation |
| 13 | 25 | Tue, Nov 13 | **Comprehensive exam** |
| | 26 | Thu, Nov 15 | BioModels curation and annotation + Choose final papers |
| 14 | 27 | Tue, Nov 20 | Final paper work session |
| | 28 | Thu, Nov 22 | **No class** - Thanksgiving break |
| 15 | 29 | Tue, Nov 27 | Final paper work session |
| | 30 | Thu, Nov 29 | Final paper work session |
| 16 | 31 | Tue, Dec 4 | **Final presentations** |
| | | Thu, Dec 6 | |
| 17 | | Tue, Dec 11 | Final paper due |
| | | Thu, Dec 13 | **Last day to turn in late work** |