# Tentative Schedule

*Please see the Assignments web page for specific reading assignments*

| Week | Date | Lecture | Due | 302 Lab |
|---|---|---|---|---|
| 1 | Sept. 29 | Intro to BIOEN 302 and instrumentation<br>Intro to Lab 1 : LEDs & photodetectors<br>Hand out worksheet on LT, complex, ODEs, oscillations, DAQ | Reading 1, review problems | LED-based photometer<br>Intro to PSPICE |
| | Oct. 1 (Q) | Review worksheet topics | Worksheet 1 | |
| 2 | Oct. 4 | Electrical safety in hospitals & devices | Reading 3 (Webster) | Finish photometer<br>Intro to LabView<br>Soldering workshop |
| | Oct. 6 | Step and impulse response | Building things: reading plus online homework | |
| | Oct. 8 (Q) | System response examples | Step & impulse HW | |
| 3 | Oct. 11 | Optical microscopes | Reading 6 | Resume workshop[l]<br>**Foege N130**<br>Project overview |
| | Oct. 13 | Convolution | Reading 7 | |
| | Oct. 15 (Q) | Convolution examples | HW | |
| 4 | Oct. 18 | Transfer functions | Reading 9 | Phase contrast microscopy w/ LabView image acquisition<br>Project overview |
| | Oct. 20 | System identification | **Quiz 1 : Convol.** | |
| | Oct. 22 (Q) | | HW 2 | |
| 5 | Oct. 25 | Feedback control | Reading 12 | Controls 1:<br>Feedback control simulation and examples |
| | Oct. 27 | Stability and pole-zero plots | | |
| | Oct. 29 (Q) | Analysis of PID controllers<br>Design of PID controllers | HW 3 | |
| 6 | Nov. 1 | LTI, phase portraits, linearization | Reading 15 | Controls 2: feedback loop design |
| | Nov. 3 | State variables<br>System dynamics, systems of ODEs | **Quiz 2 : Stability** | |
| | Nov. 5 (Q) | System dynamics examples | HW 4 | |
| 7 | Nov. 8 | Diagnostic instrumentation : survey | Reading 18 | *Veterans Day*<br>*No lab* |
| | Nov. 10 | Therapeutic instrumentation : survey | | |
| | Nov. 12 (Q) | Guest lecture? | HW 5 | |
| 8 | Nov. 15 | Lab instrumentation, part 1 | Reading 21 | ImageJ handout.<br>Cell culture workshop.<br>Project work time |
| | Nov. 17 | Cell culture overview | **Quiz 3 : ODEs** | |
| | Nov. 19 (Q) | Discuss quiz 3. | HW 6 | |
| 9 | Nov. 22 | Lab instruments, part 2 | | -- |
| | Nov. 24 | Current events | Reading 25 | |
| | Nov. 25-26 | *Thanksgiving break – no classes* | *T-E-R* | |
| 10 | Nov. 29 | Fourier transform as LT in SSS | -- | Test incubators |
| | Dec. 1 | Fourier series<br>Impedance, RLC circuits<br>Frequency response, passive filters | **Quiz 4 :**<br>**Lab inst. & safety** | |
| | Dec. 3 (Q) | Fourier review | HW 7 | |
| 11 | Dec. 6 | Case studies / current events | -- | Design project presentations<br>Course evaluations |
| | Dec. 8 | Review of concepts, course evaluations | Read ? | |
| | Dec. 10 (Q) | Review problems, Q & A | -- | |