

# ECE 3600

A. Stolp

Tentative

08/25/14

## COURSE SCHEDULE

| Week | Date     | lect                       | Topics   | Textbook     |
|------|----------|----------------------------|--|--------------|
| 1    | T 08/26  | 1                          | Introduction, Energy sources, generation, & environment                              | notes        |
|      | Th 08/28 | 2                          | Review of steady-state AC and phasors  | 1.1,2, notes |
| 2    | M 09/01  | Labor Day                  |  |              |
|      | T 09/02  | 3                          | Review of RMS, Single-phase AC power   | notes, 1.8   |
|      | Th 09/04 | 4                          | Single-phase AC power, P, Q, S,  S , pf, pf correction                               |              |
|      | F 09/05  |                            | Field Trip - Gadsby Power plant (in place of lab)                                    |              |
| 3    | M 09/08  |                            | Field Trip - Gadsby Power plant (in place of lab but starts at 2:00pm)               |              |
|      | T 09/09  | 5                          | 3-phase power, Y- and delta-connections  | 2.1-2        |
|      | Th 09/11 | 6                          | 3-phase power, balanced systems, Efficiency  | 2.4-6        |
|      | F 09/12  |                            | First lab: Electrical safety & Power factor correction                               |              |
| 4    | M 09/15  |                            | First lab: Electrical safety & Power factor correction                               |              |
|      | T 09/16  | 7                          | One-line diagrams, Electromagnetics  | 2.6, 1.4     |
|      | Th 09/18 | 8                          | Ideal transformers, Ratings, Transformation of impedance                             | 1.4          |
| 5    | T 09/23  | 9                          | Transformers, Model of the non-ideal transformer                                     | 3.1-4        |
|      | Th 09/25 | 10                         | Transformer voltage regulation, Autotransformers, 3-phase, etc.                      | 3.5-8        |
|      | F 09/26  |                            | Field Trip - Rocky Mountain Power dispatch (in place of lab)                         |              |
| 6    | M 09/29  |                            | Field Trip - Rocky Mountain Power dispatch (in place of lab but may start at 2:00pm) |              |
|      | T 09/30  | 11                         | Per-unit system  | 3.9-12       |
|      | Th 10/02 | Exam 1                     |  |              |
|      | F 10/03  |                            | Lab 2: Iron cores & transformer model  |              |
| 7    | M 10/06  |                            | Lab 2: Iron cores & transformer model  |              |
|      | T 10/07  | 12                         | Rotational Motion, AC Machinery Fundamentals   | 1.3, Ch 4    |
|      | Th 10/09 | 13                         | Synchronous machines   | 5.1-4        |
|      | S 10/11  | Fall Break                 |  |              |
|      | Su 10/19 |                            |  |              |
| 8    | T 10/21  | 14                         | Synchronous machines as generators   | 5.4-8        |
|      | Th 10/23 | 15                         | Synchronous machines as motors, pf correction  | 5.9-13       |
|      |          |                            | Field Trip - Substation (alternates with lab 3)                                      |              |
|      |          | Lab                        | Lab 3: Synchronous machines, Connection to the "line"                                |              |
| 9    | T 10/28  | 16                         | Synchronous generator on line  | Ch 6         |
|      | Th 10/30 | 17                         | 3-phase Induction motors   | Ch 7         |
| 10   | T 11/04  | 18                         | Induction motors   | Ch 7         |
|      | Th 11/06 | 19                         | Single-phase Induction motors  | Ch 8         |
| 11   | T 11/11  | 20                         | DC motors  |              |
|      | Th 11/13 | Exam 2                     |  |              |
| 12   |          | Lab                        | Lab 4: Induction motors  |              |
|      | T 11/18  | 21                         | DC motors  | Ch 8         |
|      | Th 11/20 | 22                         | DC motors  | Ch 8         |
| 13   | T 11/25  | 23                         | Transmission lines and models  | Ch 9         |
|      | Th 11/27 | Thanksgiving               |  |              |
| 14   |          | Lab                        | Lab 5: DC motors   |              |
|      | T 12/02  | 24                         | Transmission line models and calculations  | Ch 9         |
|      | Th 12/04 | 25                         | Symmetrical faults   | Ch 12        |
| 15   | T 12/09  | 26                         | Faults, The 3 "sequences"  | Ch 12, 13    |
|      | Th 12/11 | 27                         | Unsymmetrical faults   | Ch 13        |
|      | W 12/17  |                            | Review, 3:30 ?? (may change, listen in class)  |              |
| 16   | Th 12/18 | Final Exam, 1:00 - 3:00 PM |  |              |