

Circuit Analysis, Autumn 2014

Texts: On line material as outlined on the class wiki.

| Date | edX Video | Reading | Topic | Tentative Homework Problems |
|---------|---|---|---|--|
| Sept 29 | Week 1, Administrivia & Circuit Elements (S1) | Hayt, Chapter 1 | Introduction: Circuit Quantities, Symbols and Relationships | Hayt Chapter 1: 1.5,7,11; Tut 1 |
| Oct 1 | Week 1, Circuit Analysis Toolchest (S2) | OCW 6.071J, Notes 5, pages 1-12 | Ohm's Law, Kirchoff's Laws | OCW 6.071J, Notes 5, Practice Problems (all); Hayt, Tut 2 |
| 3 | | OCW 6.071J, Notes 5, pages 12-end | Voltage and Current Division, Parallel and Series Circuits | Hayt Tut 3.4.5 |
| 6 | | Hayt, Chapter 3, OCW 6.071J 6, Irwin Ch. 3 | Nodal Analysis | Hayt Tut 6: OCW 6.071J Notes 6, PP 4.1 & 4.2 |
| 8 | | Hayt, Chapter 3, OCW 6.071J 6, Irwin Ch. 3 | Loop and Mesh Analysis | Hayt Tut 7: OCW 6.071J Notes 6, PP 4.3-6 |
| 10 | | | Analysis Practice | |
| 13 | | | Practice | |
| 15 | | | SERVICE DAY | |
| 17 | Linearity and Superposition (S3) | OCW 6.071J 7, pages 1-6, Irwin 5.2, Hayt 3.8 | Superposition | OCW 6.071J, Notes 7, Practice Problems P1-P3: Hayt Tut 10 OCW 6.071J, HW#3 |
| 20 | Dependent Sources and Amplifiers (S8) | OCW 6.071J 7, pages 7-24, OCW 6.071J 8 | Thevenin's & Norton's Theorem | Hayt Tut 8: OCW 6.071J Notes 7, Practice Problems P4-P7 |
| 22 | | | Practice problems | Study for exam! |
| 24 | | | Exam 1 | |
| 27 | Capacitors and First Order Circuits (S12) | OCW 12 | Dynamic Elements (Capacitors and Inductors) | OCW 6.071J 12, all problems: OCW, HW#5, Hayt Tut 11 |
| 29 | Inductors and First Order Circuits (S13) | Irwin 7.1-2, OCW 6.071J 18, OCW 19, pages 1-9 | First Order Circuit Solutions | Hayt Tut 12: Irwin 7.5,21,74 |
| 31 | | | | |
| Nov 3 | Undamped Second Order Systems (S17) | Irwin 7.3-5, OCW 6.071J 18, pages 9-18 | Second Order Circuits | Hayt Tut 13: Irwin 7.91 |
| 5 | Damped Second Order Systems (S18) | | More Second Order Circuits | Irwin 7.101 |
| 7 | The Impedance Model (S20) | OCW 6.071J 14 | Sinusoidal Shortcut Methods (Phasors) | OCW 6.071J, HW#6 |
| 10 | Sinusoidal Systems (S19) | Irwin, Ch 8, OCW 6.071J 13 | Sinusoidal Forcing Functions | |
| 12 | | | Exam 2 | |
| 14 | | | | |
| 17 | | | | |
| 19 | Filters (S21) | OCW 6.071J 16 | Filters | |

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|--------|--|-------------------------------------|----------------------------|--|
| 23-30 | | | THANKSGIVING | |
| Dec 1 | | | | |
| Dec 3 | Time Domain and Frequency Domain (S22) | | Time and Frequency Domains | |
| 5 | | Nilsson, Chapter 10 | Power in AC Circuits | Nilsson, 10.3, 10.7, 10.19 |
| 8 | | | | |
| 10 | | | Practice and Review | |
| 12 | | | Review | |
| Dec 16 | | | Final Exam at 2:00 p.m. | |

Last modified: 11/10/14.

This schedule is subject to modifications announced in class or on the class wiki.

Notes are available on the web at: <http://www.wallawalla.edu/~frohiro/ClassNotes/>.

The Class Wiki is available on the web (only on campus) at:
http://fweb.wallawalla.edu/class-wiki/index.php/Main_Page.

This schedule is subject to change as announced in class. Whenever you are absent from class, you are responsible to obtain information that you have missed. Notes should be available on the web at <http://www.wallawalla.edu/frohiro/ClassNotes/>. If you need assistance because of any physical or learning disability, please contact the professor or the Special Services offices at 527-2366.

The objective of this class is to understand lumped circuit analysis including:

1. Ohm's Law
2. Kirchhoff's Laws
3. Nodal, and Loop Analysis
4. Linearity, Thevenin and Norton's Theorems
5. First and Second Order Circuits
 1. Transient response
 2. Forced response
6. Sinusoidal Steady State Analysis
7. Power
8. Life long Learning
9. Team work