



Distribution Systems

IEIR 1312

INSTRUCTOR: Danny Bailey Office Phone: 335-6832 Cell Phone:352-9030 Office Hours: As Posted

COURSE NUMBER: IEIR 1312

CREDIT HOURS: 3 (3/0)

PREREQUISITE: NONE

CATALOGUE DESCRIPTION:

IEIR 1312 Distribution Systems (3-0) 3 semester hours
Fundamentals of distribution systems including single phase and three phase systems, grounding, ground fault protection, and the national electrical code.
(SCANS 5,8,9) Prerequisite: none

TEXTBOOK: None

SUPPLIES: 1. Calculator

Learning Outcomes:

After completing this course, the student should be able to demonstrate competency in:

1. Identify electrical systems and their uses
2. Identify transmission techniques
3. Identify techniques in distributing electrical power
4. Identify historical progress of electricity

Course Requirements:

1. Complete all scheduled worksheets and test
2. Complete report
3. Attend all field trips
4. Complete a final test

METHODS OF EVALUATION:

Grade Scale	
Points	Grade
90-100	A
80-89	B
70-79	C
65-69	D
0-64	F

WEIGHT OF COURSE REQUIREMENTS

Field Trips	25%
Presentation	25%
Test 1, 2	25%
Final	25%

ATTENDANCE POLICY\PROFESSIONALISM POLICY

Attendance is the greatest predictor of your success. Your attendance at EVERY ONE of the classes and labs is important and expected. A substantial grade penalty will be assessed to late work; including homework, lab assignments, and test. The "Professionalism Grade" will be determined by such factors as attendance, tardiness, class participation, and other classroom factors.

COURSE Details

- 1.1 Discuss magnetism and its uses and effects for generating electricity
- 1.2 Describe differences between AC and DC
- 1.3 Discuss advantages/ disadvantages between AC and DC
- 1.4 Describe methods of regulating currents and voltages
- 1.5 Discuss efficiency and effectiveness of various generation systems
- 1.6 Discuss loading effects on a generator
- 1.7 Describe regulators and their uses
- 1.8 Explain exciters and their uses
- 1.9 Describe frequencies and its regulation
- 1.91 Discuss prime movers
- 2.1 Discuss fossil fuels
- 2.2 Discuss nuclear fuels
- 2.3 Discuss wind, water, and other alternative fuel sources
- 3.1 Discuss transmission of AC and DC
- 3.15 Explain transmitting electricity at high voltages
- 3.2 Describe transformers and their purposes
- 3.4 Describe line loss (see SUPERCONDUCTOR) video
- 3.5 Describe voltage drops
- 3.6 Discuss breakers and fuses and their related uses
- 3.7 Describe line connections and distribution
- 3.71 Each student will plot and describe a distribution line
- 3.8 Describe reasons for brown outs, black outs, and low voltages
- 3.9 Describe demand factors
- 3.91 Discuss electrical meters
- 3.92 Each student will read and explain several meter readings
- 4.1 Explain single phase power and its uses
- 4.2 Explain three phase power and its uses
- 4.3 Describe transformer connections and how to identify each
- 5.1 Each student will be responsible for an oral report -see instructor for further details
- 6.1 Discuss inductor and their effects
- 6.2 Discuss capacitors and their effects
- 6.3 Explain the effects of inductors and capacitors in a circuit

Special Needs

Odessa College complies with Section 504 of the Vocational Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990. If you have any special needs or issues pertaining to your access to and participation in this or any other class at Odessa College, please feel free to contact me to discuss your concerns. You may also call the Office of Disability services at 432-335-6861 to request assistance and accommodations.

Learning Resource Center (Library)

The Library, known as the [Learning Resources Center](#), provides research assistance via the [LRC's catalog \(print books, videos, e-books\)](#) and [databases \(journal and magazine articles\)](#). [Research guides](#) covering specific subject areas, [tutorials](#), and the "[Ask a Librarian](#) " service provide additional help.

Student E-mail

Please access your [Odessa College Student E-mail](#), by following the link to either set up or update your account: <http://www.odessa.edu/gmail/>. **All assignments or correspondence will be submitted using your Odessa College email.**

Student Portal

Please access your [Odessa College Student E-mail](http://www.odessa.edu/gmail/), by following the link to either set up or update your account: <http://www.odessa.edu/gmail/>. **All assignments or correspondence will be submitted using your Odessa College email.**

Technical Support

For Blackboard username and password help and for help accessing your online course availability and student email account contact the Student Success Center at 432-335-6878 or online at https://www.odessa.edu/dept/ssc/helpdesk_form.htm.

Important School Policies

For information regarding student support services, academic dishonesty, disciplinary actions, special accommodations, or student's and instructors' right to academic freedom can be found in the [Odessa College Student Handbook](#).