

ARC 236
ARCHITECTURAL MECHANICS/ELECTRONICS TECHNOLOGY

COURSE DESCRIPTION:

Prerequisites: ARC 230

Corequisites: None

This course covers the production of working drawings for plumbing, mechanical, and electrical (PME) systems for buildings. Topics include PME working drawing development. Upon completion, students should be able to produce PME working drawings and schedules. Course Hours Per Week: Lab, 4. Semester Hours Credit, 2.

COURSE OBJECTIVES:

A student who successfully completes this course will be able to:

- a. Understand principles of electric power distribution for buildings, and how to provide outlets required by NEC
- b. Draft electric power plan, panel boards and risers from sketches
- c. Draft electric lighting plans from sketches
- d. Understand principles of lighting and color rendition
- e. Draft electrical, plumbing, HVAC and alarm system plans
- f. Draft plumbing plans and riser diagrams from sketches
- g. Understand principles of water supply, waste and venting
- h. Draft ductwork plans, mechanical details, and schedules from sketches
- i. Understand principles of heat flow, and insulation value of materials assemblies
- j. Choose and size heating and cooling systems, and refer to manufacturers literature
- k. Use a ductulator and psychometric chart
- l. Size ductwork based on airflow quantities
- m. Draft security, fire and hazard alarm systems

OUTLINE OF INSTRUCTION:

- I. History of energy – Electrical plans
 - A. Power distribution
 - B. The floor as a template
 - C. Circuit load calculations
 - D. Symbols

- II. Plumbing plans

- A. Water supply schematics
 - B. Sanitary waste water schematics
 - C. Isometric riser diagrams
 - D. Symbols
- III. HVAC
- A. Using the floor, ceiling and roof framing plans
 - B. Basic HVAC calculations
 - C. Air supply and return
 - D. Drawing ductwork distribution / return
 - E. Symbols

REQUIRED TEXTBOOKS AND MATERIALS:

To be announced

STATEMENT FOR STUDENTS WITH DISABILITIES:

Students who require academic accommodations due to any physical, psychological, or learning disability are encouraged to request assistance from a disability services counselor within the first two weeks of class. Likewise, students who potentially require emergency medical attention due to any chronic health condition are encouraged to disclose this information to a disability services counselor within the first two weeks of class. Counselors can be contacted by calling 686-3652 or by visiting the Student Development Office in the Phail Wynn Jr. Student Services Center, room 1309.