

# COLLEGE OF ENGINEERING MECHANICAL AND ELECTRICAL DEPARTMENT



**COURSE NAME:** ELECTRICAL DIAGRAMS  
**COURSE ID:**  
**FACULTY COURSE:** 5607  
**UNIVERSITY COURSE ID:**  
**CACEI ID:** CI  
**STUDY PLAN LEVEL:** I.EA.: VII, I.M.E.:VIII  
**CREDITS:** 3  
**NORMAL HOURS PER WEEK:** 0  
**TOTAL HOURS COURSE:** 48  
**LAB HOURS COURSE:** 3  
**COMPLEMENTARY PRACTICES:**  
**EXTRA-CLASS WORK HOURS / WEEK:** 0  
**COURSE TYPE:** I.EA./OBLIGATORIA PROPIA DE LA CARRERA  
I.M.E./ OBLIGATORIA PROPIA DE LA CARRERA  
**APPROVED CREDITS NEEDED:**  
**CURRICULAR LAST REVISION DATE** 11/2010  
**PREREQUISITE COURSE:** ELECTRICAL MACHINES A

## COURSE JUSTIFICATION

IT IS AN INDISPENSABLE TOOL IN THE MANAGEMENT AND INTERPRETATION OF DRAWINGS AND ELECTRICAL DIAGRAMS, AS IT DEPENDS ON THE ANALYSIS AND SOLUTION OF PROBLEMS THAT ARISE IN A WIDE VARIETY OF INDUSTRIAL EQUIPMENT WHOSE OPERATION IS RELATED TO ELECTRICITY, ALSO FACILITATE THE INTERPRETATION OF THIS OPERATION, WHICH MAKES THAT A NEWLY GRADUATED THAT YOU POSSESS THESE SKILLS IS A FACTOR OF SELECTION TO FILL VACANCIES.

## COURSE OBJECTIVE

ACQUIRE THE ABILITY REQUIRED TO DRAW UP AND INTERPRET VARIOUS INDUSTRIAL AND RESIDENTIAL ELECTRICAL DIAGRAMS THROUGH THE KNOWLEDGE OF THE EUROPEAN AND AMERICAN SYMBOLISM.

2.2 RESIDENTIAL ELECTRICAL DIAGRAMS.

## COURSE TOPIC

1. INTRODUCTION. 2 HRS.

OBJECTIVE: INTRODUCE THE STUDENT IN THE SUBJECT BY PRESENTING AND EXPLAINING THE AIM OF THE COURSE AND ITS AGENDA, AS WELL AS THE POLICIES AND METHODS.

1.1 OBJECTIVES AND AGENDAS.

1.2 POLICY AND METHODS.

2. RESIDENTIAL ELECTRICAL SYMBOLS.

17 HRS. .

OBJECTIVE: ANALYZE THE RESIDENTIAL ELECTRICAL SYMBOLS AND THE DEVELOPMENT OF RESIDENTIAL ELECTRICAL PLANS.

2.1. RESIDENTIAL ELECTRICAL SYMBOLS.

3. INDUSTRIAL ELECTRICAL SYMBOLS. 26 HRS.

OBJECTIVE: ANALYZE THE ELECTRICAL SYMBOLS USED IN INDUSTRIAL PLOTS.

3.1 ELECTRICAL SYMBOLS EUROPEAN AND AMERICAN.

3.2. CONTROL AND FORCE DIAGRAMS.

3.3 INTERPRETATION OF DIAGRAMS

3.4 PREPARATION OF DIAGRAMS SIMPLE CONTROL

4. DIAGRAMS OF SUBSTATIONS. 3 HRS.

OBJECTIVE: TO ASSESS THE DIFFERENT TYPES OF SUBSTATIONS AND THEIR ADVANTAGES.

4.1 TYPES OF SUBSTATIONS.

4.2 ADVANTAGES AND DISADVANTAGES OF THE ARRANGEMENTS

## METODOLOGY

THE MOST APPROPRIATE WAY OF LEARNING THE DEVELOPMENT OF DIAGRAMS IS SHOWING THE MOST COMMON BOTH RESIDENTIAL AND INDUSTRIAL SYMBOLS AND THAT IN TURN, THESE MAY BE ASSOCIATED WITH ELECTRICAL DEVICES THAT REPRESENT. ALLOWING THE STUDENT, THE INTERPRETATION ALTOGETHER OF AN ELECTRICAL DIAGRAM WITH ALL ITS SYMBOLS, AND THE STUDENT, GO OBSERVING GENERAL PROGRESS, AND TO MASTER THE BASES TO GRADUALLY INCREASE IN DIFFICULTY AND THUS FULFILL THE THEMATIC PROGRESSION.

## EVALUATION CRITERIA

FINAL GRADE.	AVERAGE PARTIAL 3.
PARTIAL QUALIFICATION. WORKS AND DRAWINGS	EXAM 70% 30%
RATING OF EACH DIAGRAM.	PRESENTATION 50 CONTENT 50

## BIBLIOGRAPHY

### BIBLIOGRAFÍA COMPLEMENTARIA.

CONELEC, S.A., MANUAL ELÉCTRICO, CONDUCTORES ELÉCTRICOS Y ALAMBRES MAGNETOS, ED. CONELEC.  
ENRÍQUEZ HARPER, EL ABC DE LAS INSTALACIONES ELÉCTRICAS INDUSTRIALES, ED. LIMUSA.

NOM-001-SEIE-1999 INSTALACIONES ELÉCTRICAS UTILIZACIÓN.  
CONDUMEX, CATALOGO GENERAL, ED. CONDUMEX.  
FRANZ PAPERKORT, DIAGRAMAS ELÉCTRICOS DE CONTROL Y PROTECCIÓN, DE. TRILLAS.