# SYLLABUS: ELPT 1341- MOTOR CONTROL

INDUSTRIAL & COMMERCIAL ELECTRICITY BRAZOSPORT COLLEGE

*The Brazosport College District shall not discriminate against, or exclude from participation in any benefits or activities either on the staff or in the student body, any person on the grounds of sex, race, color, religion, national origin, age, or handicap.*

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## COURSE EVALUATION

### STUDENT EVALUATION

A. Homework will account for no more than 15% of total grade.
B. NCCER Exams will account for no more than 45% of total grade.
C. Labs and Participation will account for no more than 20% of the total grade.
D. Final exam will account for no more than 20% of total grade.

### INSTRUCTOR EVALUATION

A. Students will be given an opportunity to evaluate their instructor & the course content.
B. The instructor will review and evaluate in terms of withdrawal rate.
C. Final grades given will be reviewed in an effort to determine if a pattern of high or low grades exists.

### DEPARTMENT EVALUATION OF COURSE

A. Faculty & the Division Chair will review student grades & withdrawal trends.
B. Faculty and the Division Chair will review the Course Competencies and Perspectives Assessment.

## COURSE DESCRIPTION

Study of the operating principles of solid-state controls along with their practical applications. Topics include braking, jogging, plugging, and safety interlocks, wiring, and schematic diagram interpretations. NCCER credit available. (3 SCH, 2 lecture, 2 lab)

## TEXT AND REFERENCES

NCCER Contren Learning Series, Electrical Level 3 Trainee Guide 2014,

National Electric Code, 2014 published by National Fire Protection Association. ISBN:978-145590672-7

"Required course materials are available at the Brazosport College bookstore, on campus or online at http://www.brazosport.edu/bookstore. A student of this institution is not under any obligation to purchase a textbook from the college bookstore. The same textbook is/may also be available from an independent retailer, including an online retailer."

**Modules**:
NCCER 26306-14 Distribution Equipment
NCCER 26309-14 Motor calculations
NCCER 26311-14 Motor control

## STUDENTS WITH DISABILITIES

Brazosport College is committed to providing equal education opportunities to every student. Brazosport College offers services for individuals with special needs and capabilities including counseling, tutoring, equipment, and software. Please contact the Special Populations Counselor at (979) 230-3236 for further information.

## ACADEMIC HONESTY

Brazosport College assumes that students eligible to perform on the college level are familiar with the ordinary rules governing proper conduct including academic honesty. The principle of academic honesty is that all work presented by you is yours alone. Academic dishonesty including, but not limited to, cheating, plagiarism, and collusion shall be treated appropriately. Please refer to the Brazosport College Student Guide for more information. This is available online at http://www.brazosport.edu. Click on the CATALOGS AND SCHEDULES link under STUDENTS.

Academic dishonesty violates both the policies of this course and the Student Code of Conduct. In this class, any occurrence of academic dishonesty will be referred to the Dean of Student Services for prompt adjudication, and will, at a minimum, result in 0 for that assignment in this course. Sanctions may be imposed beyond your grade in this course by the Dean of Student Services.

## COURSE GOALS

The following list of course goals will be addressed in the course. These goals are directly related to the performance objectives (Addendum A).
(* designates a CRUCIAL goal)

## GENERAL GOALS/OBJECTIVES

1. Interpret motor control wiring, connection, and ladder diagrams.
2. Describe a typical switchgear transformer, list its testing and maintenance requirements.
3. List the safety precautions associated with instrument transformers and describe their maintenance requirements.
4. Describe a typical control transformer & list its testing & maintenance requirements.
5. Identify contactors and relays both physically and schematically and describe their operating principles.

6. Connect motor controllers for specific applications according to NEC requirements.
7. Size and select overcurrent protective devices for motors.
8. Select instruments for motor testing.
9. Select tools for motor maintenance.

**STUDENT CONTRIBUTIONS**

Each student will spend at least 4 hours per week preparing for class. The student will have an opportunity to evaluate the instructor.

## COURSE EVALUATION

**Student grades will be assigned according to the following criteria:**

LABS/PARTICIPATION 20% HOME WORK 15%
NCCER EXAMS 45% FINAL EXAM 20%

The student will be graded in accordance with established college policy. Grades of A through F will be assigned according to the chart below:

100-90 = A 89-80 = B 79-70 = C 69-60 = D 59-0 = F

ATTENDANCE AND WITHDRAWAL POLICIES

The class meets for 2 lecture hours and 2 lab hours per week. Each student will spend at least 4 hours per week preparing for class.

• Attendance is critical since this class meets only once a week. Attendance will be taken each class period. If you miss a class, it is your responsibility to schedule any make-up test, homework, or lab with the instructor.
• Because many assignments are prepared during class time, absences may adversely affect the final grade in the class.
• Students will be dropped if they miss more than 3 classes before the drop date.
• Tardies and leaving early will count as one half of an absence.
• Students are also expected to take care of the equipment in the classroom. PLEASE DO NOT BRING FOOD, DRINKS, OR UNAUTHORIZED PERSONS INTO THE CLASSROOM.
• It is the student's responsibility to withdraw from a course if circumstances occur that could prevent the student from successfully completing that course. Students should notify instructor of decision to withdraw and must not assume the instructor will complete the paperwork for the student. The instructor will complete required paperwork only if the instructor decides to drop a student for cause. Failure to notify instructor of withdrawal could result in the student failing the course.

***During class, cell phones and all electronic devices are to be turned off or set on "vibrate" mode for the entire class period.*** Examples: cell phone use of any kind- including music, camera, recording; recording devices of any kind- tape recorders .If you are expecting a call of an urgent nature, please inform me before class to make arrangements in handling the call.

**COMPUTER USAGE**

Computers are to be used for class assignments only. If you are doing internet searches, listening to music, playing games, sending or receiving email, using facebook,instagram, twitter or snapchat, you will be asked to leave immediately. You will be counted absent and receive a zero

for any work assigned during the class period. This includes homework as well as in-class assignments.

## ASSIGNMENTS AND MAKE-UP POLICY

Students are responsible for completing all reading and homework assignments prior to class. All assignments are due on the date assigned. No late work will be accepted unless the student has an excused absence. An excused absence is when the student notifies the instructor of his or her absence prior to class.

Please note that changes in the Texas Education Code state that students enrolling for the first time in a Texas public institution of higher education in the fall of 2007 or after, will not be permitted to withdraw from more than a total of six courses (no minimum number of credit hours on each course) in which the student is officially enrolled during the student's period of undergraduate study at all such institutions (this includes any course a transfer student has dropped at another institution of higher education). See http://www.brazosport.cc.tx.us/CurStu.html for more information.

## ADDENDUM A PERFORMANCE OBJECTIVES

**NCCER Module 26306-11:** NO PERFORMACE
**NCCER Module 26309-11:** NO PERFORMACE
**NCCER Module 26311-11:**
**Task**
1. Make all connections for a magnetic motor controller, controlled by two pushbutton stations, including the connections for holding the circuit interlock.
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## CLASS SCHEDULE

The following is a tentative schedule for the course. The instructor reserves the right to make schedule changes based on the needs of the students in the class.

| WEEK | SUBJECT | TEXT |
|---|---|---|
| **1** | Module 26306 Presentation, Lecture Class participation required for introductory presentation, some hands-on of components | NCCER 26306-14 |
| **2** | Module 26306 Presentation, Lecture continued; Lab | |
| **3** | Module 26306 Presentation, Lecture continued; Lab | |
| **4** | Module 26306 Presentation, Lecture continued; Lab | |
| **5** | **Module 26306 Test**;26309 Presentation, Lecture Class participation required for presentation, Lab: hands-on assembly/disassembly of components | NCCER 26309-14 |
| **6** | Module 26309 Presentation, Lecture continued; Lab | |
| **7** | **MODULE 26309TEST**/Module 26311 lecture; Lab | |
| **8** | Module 26311 Presentation, Lecture Class; Lab | NCCER 26311-14 |
| **9** | Module 26311 Presentation, Lecture continued; Lab | NCCER 26311-14 |
| **10** | Module 26311 Presentation lecture continued; Lab | NCCER 26311-14 |
| **11** | Module 26311 Presentation lecture continued; Lab | NCCER 26311-14 |
| **12** | Module 26311 Presentation, Lecture continued; Lab | NCCER 26311-14 |
| **13** | Module 26311 Presentation, Lecture continued; Lab | NCCER 26311-14 |
| **14** | **MODULE 26311 TEST** | |
| **14** | **FINAL TEST REVIEW** | |
| **15** | **FINAL EXAM - comprehensive** | |

# SYLLABUS ELPT 1341
# MOTOR CONTROL

## COURSE SYLLABUS AGREEMENT FORM

**YEAR_____ SEMESTER_____**

**LAST/FIRST NAME (PRINT) _____**

**DATE_____ TIME _____**

**INSTRUCTOR _____**

**I have enrolled in ELPT 1341 – MOTOR CONTROL and agree that I have received a copy of the course syllabus. I agree as a condition of enrollment and participation in the course that I have read the syllabus and will comply with the requirements. It is understood that during the semester the instructor may have to make adjustments to the weekly class schedule.**

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**SIGNATURE** **DATE**