هيئة تقويم التعليم والتدريب
Education & Training Evaluation Commission

T-104
2022

Course Specification

Course Title:	Motor Control System
Course Code:	226 EPET
Program:	Electrical Power Engineering Technology (EPET)
Department:	Electrical Engineering Technology (EET)
College:	College of Applied Industrial Technology (CAIT)
Institution:	Jazan University
Version:	T-104 - 2022
Last Revision Date:	

Table of Contents:

A. General Information about the Course

Course Identification								
1. Credit Hours: 3								
2. Course Type:								
a. University		College		Department	☑	Track		Others
b. Required	☑	Elective						
3. Level/year at which this course is offered:	5th Level		2nd Year					

4. Course General Description

The course introduces basic concepts and theory of speed control of dc motor, operation, and maintenance of motor control devices commonly used in the electrical construction industry. Skills in testing, troubleshooting, and safety techniques will be developed through hands-on training and the use of field-simulated problems. In addition, this course includes a discussion of the theory and the practical application of dc motors as well as C++ basic programming used in the electrical industry. Writing assignments, as appropriate to the discipline, are part of the course.
The course is introduced through 2-hrs theoretical and 2-hrs practical classes weekly.

5. Pre-requirements for this course (if any): 212 EPET
6. Co- requirements for this course (if any): -------
7. Course Main Objective(s):

- Introduce students to the control the speed of DC using basic concepts
- Introduce students to the operating principles, methods of starting and controlling of electrical dc machine with application.
- Knowledge , skills and values based preparations to EPET students

1. **Teaching Mode: (Mark all that apply)**

No	Mode of Instruction	Contact Hours	Percentages
1	Traditional classrooms		0.0%
2	E-learning		0.0%
3	Hybride * Traditional classrooms * E-learning	48	100.0%
4	Distance learning		0.0%

2. **Contact Hours (based on the academic semester)**

No	Activity	Contact Hours
1	Lectures	24
2	Laboratory/Studio	24
3	Field	
4	Tutorial	
5	Others (specify)	
	Total	**48**

Course Learning Outcomes (CLOs), Teaching Strategies and Assessment Methods

Code	Course Learning Outcomes (CLOs)	Code of CLOs aligned with program	Teaching Strategies	Assessment Methods
1.0	**Knowledge and understanding**			
1.1	Identify control circuit of the various industrial motor using programming	K1.3	Structured Lectures Worked Examples	Quizzes Exams
2.0	**Skills**			
2.1	Utilised modern technology to control the motor	S1.3	Structured Lectures Worked Examples	Quizzes Exams
2.2	Apply common sense to recongnise a various types of programming	S2.2	Structured Lectures Worked Examples	Quizzes Exams
2.3	Analyse the logical data of C++ programmin to write a programm	S4.3	Structured Lectures Worked Examples	Quizzes Exams
3.0	**Values, autonomy, and responsibility**			
3.1	Demonstrate the ability to work independently and meet deadlines.	V1.2	Questioning Collaborative Learning	Homework Presentation
3.2	Identify contemporary issues related to programming	V2.2	Structured Lectures Worked Examples	Exams Presentation

C. Course Content

No	List of Topics	Contact Hours
1	DC motor • Various types of DC motor and their characteristics • Speed control of DC motors	6
2	DC motor testing • Testing of DC machine by direct method • Testing of DC machine by indirect methods	6
3	Sheet 1 -Experiment lab 1 Permanent Magnet DC motor	4
4	Sheet 2 -Experiment lab 2 DC shunt motor speed control by Armature control	2
5	To study of PLC	4
6	Experiment 4 DC shunt motor speed control by Field control using PLC	4
7	C++ Programming • THE CONTEXT OF SOFTWARE DEVELOPMENT • BASIC STRUCTURE OF C++	8
8	Experiment 5 Basic programming uisng C++	2
9	Experiment 6 Sum of two integer using C++	2
10	Experiment 7 Basic Programming of PLC	4
11	Lab presentation/Lab Revision and Final lab Exam	4
12	Revision	2
	Total	**48**

D. Students Assessment Activities

No	Assessment Activities	Assessment Timing (In Week No)	Percentage of Total Assessment Score
1	Home work and class activities	Week 2	10%
2	Mid Term	Week 7	20%
3	Lab performance	Week 1	10%
4	Lab presentation	Week 10	10%
5	Final Exam (LAB)	Week 11	20%
6	Final Exam	As Scheduled	30%

* Assessment Activities (i.e., Written test, oral test, oral presentation, group project, essay, etc.)

E. Learning Resources and Facilities

1 References and Learning Resources

Essential References	1	• A.E. Fitggerald, C.Kingsley Jr and Umans, "Electric Machinery", McGraw Hill, International Student Edition
	2	• Book Written by coordinator of subject/PPT/Notes
Supportive References	1	Husain Ashfaq , " Electrical Machines", Dhanpat Rai & Sons
	2	Lecture Notes
Electronic Materials	1	Smart Board Projector
	2	Blackboard SDL
Other Learning Materials	1	Online notes
	2	Practical books

2 Required Facilities and Equipment

Items	Resources
Facilities (Classrooms, Laboratories, Exhibition rooms, Simulation Room, etc.)	Suitable Classroom Suitable Lab Whiteboard Suitable number of chairs
Technology Equipment (Projector, Smart Board, Software)	Smart Board Projector Suitable Software
Other Equipment (Depending on the nature of the specialty)	Suitable workshop Project lab Testing machines

F. Assessment of Course Quality

Assessment Areas/Issues	Assessor	Assessment Method
Effectiveness of Teaching	Student	Indirect
	Course Instructor (Faculty)	Direct/Indirect
	Quality Auditor	Indirect
Quality of Learning Resources	Quality Auditor	Direct/Indirect
The extent to which CLOs have been achieved	Course Instructor (Faculty)	Direct/Indirect
Other		

G. Specification Approval Data

Council/Committee	Electrical Engineering Technology (EET)
Reference Number	CAITEET23031
Date	9/3/2023