|  |  |  |  |
| --- | --- | --- | --- |
| **Date:** | Examination No.: | Version: 2022-2023 | Start: |
| **Module Name - Code** | Electric Drives - 21307 |
| **Module Language:** | English |
| **Responsible:** | Ali Abdulqadir Raool  |
| **Lecture (s):** |  |
| **College:** | College of Engineering - Salahaddin University-Erbil |
| **Duration:** | 15 week – 1 semester |
| **Course outcomes:** | * By the completion of this course, the students will be able:
* To get the knowledge of electric drive selection for practical industrial requirement based on              power rating and particular drive application.
* To select a suitable machine for an electrical motor drive.
* To use a suitable power electronic converter for the drive system.
* To choose various control techniques employed for controlling drives with ac and dc motors.
 |
| **Course Content:** | * Introduction to electric drives.
* Drive types, components, choice, size, and thermal rating of the motor.
* DC drives using single phase and three phase controlled rectifiers.
* DC drives using DC chopper and four quadrant operation of the motor.
* AC drives using AC regulator and Inverter with their applications in three phase              induction motor speed control.
* Electric traction system types, components, types of electrification systems, speed time curves for main Line service.
 |
| **Literature:** | * Electrical Machines, Drives and Power Systems by: Theodore Wildi.
* Power Electronics, Circuits and Applications by: Muhammad H. Rashid
* Basics of Electrical Drives by: S K PILLAI
* Principle of Electric Machines and Power Electronics by: P. C. SEN
 |
| **Type of Teaching:** | 3 hrs. in lectures |
| **Pre-requisites:** | None |
| **Preparation Modules:** | Power Electronics  |
| **Frequency:** | Spring Semester  |
| **Requirements for credit points:** | For the award of credit points, it is necessary to pass the module exam. It contains:Three examination during the academic semester, Assignments and Final examination.**Student's attendance is required in all classes**. |
| **Credit point:** | 4 |
| **Grade Distribution:** | The following grade system is used for the evaluation of the module exam: The module exam is based on the summation of two categories of evaluations:First: **(40%)**of the mark is based on the academic semester effort which includes:                 -Theory exam during the academic semester. **(25%)**                - Quizzes: **(10%)**                - Homework and assignments: **(5%)**Second: **(60%)** of the mark is based on final examination that is comprehensive for the whole of the study materials reviewed during the academic semester.  |
| **Work load:** | The workload is 135 hrs. It is the result of 45 hrs. attendance and 90 hrs. self-studies (Assignments, preparation for exam and applications). |