EEE522Electric Drives (2 Units)

Department of Electrical and Information Engineering

Covenant University

1. EEE522

1.1. EEE522Electric Drives (2 Units)

Introduction: Definitions, advantages, disadvantages of electric drives. Classification: Group drives, individual drives, and multi motor drives, advantages and disadvantages of each. Common types of motors used in electric drives: dc motors, induction motors, and synchronous motors. Selection of appropriate motors for electric drives: environmental considerations (temperature, humidity, dust, chemical, etc). Factors for selection electrical, mechanical, size and rating and cost. Motor characteristics and applications: Torque/speed characteristics, Speed/time relationship. Braking, reversing, and regenerative actions. Dynamics of electric drives. Control of electric motors: dc motor drives, induction motor drives, and synchronous motor drives. Drives for specific applications: Textile mills, steel rolling mills, cranes and hoist drives, cement mills, sugar mills, machine tools, paper mills, coal mines, etc. Control techniques for electric drives: microprocessors and control of electric drives, Artificial Intelligent based Drives.