

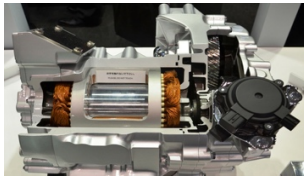
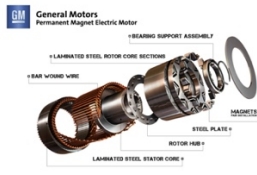
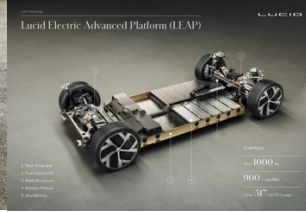


OPUS
College of Engineering

MARQUETTE UNIVERSITY

Electrical and Computer Engineering

ELEN 4290/EECE 5290 FALL 2021
Analysis and Control of Electric Drives
Tuesday 5:00 pm - 7:30 pm



- Understanding Mechanical System Requirements for Electric Drives
- Switch-Mode Power Electronic Converters
- Position, Acceleration, and Velocity Control in Electric Drives
- Space Vectors to Analyze AC Machines
- Permanent-Magnet ac (PMAC) Drives (Used in Electric Vehicles)
- Induction-Motor Drives
- Induction-Motor Speed Control



Instructor:
Dr. Nathan Weise, EECE, Marquette University



<https://www.empower-lab.com/>

COURSE FORMAT

- 📖 In Person Lecture Course
- 📖 In Person Lab with Electric Drives and Various Electric Machine Types
- 📖 Hands-on Drives Lab with Real World Examples

PROJECT EXAMPLES

- Steady State Operation of AC Machines
 - ▲ Converters and Control
- Vector Control of AC Machines
 - ▲ Space Vectors
- Electric Machine Mechanical Dynamics
 - ▲ Acceleration, Active Brake, Positioning
- PMAC
 - ▲ Permanent Magnet AC Machine
- Induction Machine
 - ▲ V/f control