

Bridge Theory with Real-World Manufacturing of Electrical Machine

At EMDLab, we recognize the missing link in electrical machine education. Discover how our comprehensive training bridges the practical gap in design, manufacturing, and operation!



What Our Participants Say



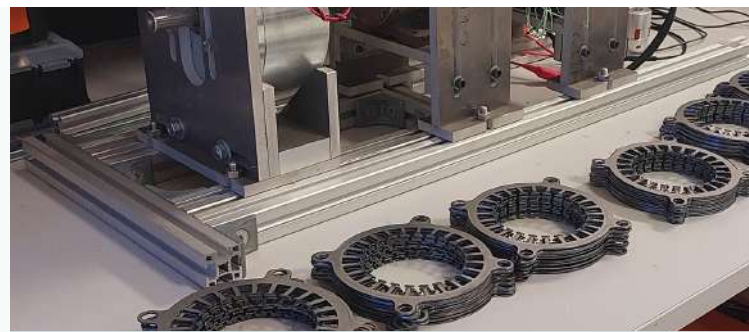
“Building real motors gave me hands-on experience that would have taken years to learn in industry. I am now confident to work with motors.”

Rhesyan Naidu - Trainee, IEM student branch UMPSA

“The program bridges the missing practical gap in electrical machine education. My students are now confident technologists.”



Suhaimi Puteh - Vocational Training Officer UMPSA



Contact us today to transform your engineering education



<https://azrihizami.github.io/Module.IM/>

Early Adopter Program

Pilot Program Available
Be Among the First TVET Institutions!

Program Structure

- 5 Comprehensive Modules
- Theory + Hands-on + Testing
- Flexible Implementation
- Ongoing Support Available



EMDLab

Faculty of Manufacturing & Mechatronics
Engineering Technology



EMDL
Electromechanical Drivetrain
Laboratory



Transform TVET Programs with Induction Machine Training



<https://azrihizami.github.io/Module.IM/>
Universiti Malaysia Pahang Al-Sultan Abdullah



What Makes Us Different?

Hands-On Manufacturing

Students build actual motors using professional manufacturing techniques and quality control methods

Testing & Integration

Connect motors to various drive systems including DOL, star-delta, and VFD.

Complete Learning Journey

From electromagnetic theory to VFD integration with measurable learning outcomes



5 Comprehensive Training Modules

Our 1-week curriculum progresses from fundamental electromagnetic principles to complete motor manufacturing and testing



1 Theory Foundation

Master electromechanical energy conversion principles and induction motor theory:

- Core electromagnetic concepts
- Faraday's law and Lorentz force concepts
- Rotating magnetic field principles
- Equivalent circuit of induction machine



2 Core Lamination Design

Learn about the stator core and rotor design, their materials and manufacturing process:

- Core lamination design and issues
- Rotor design and issues
- Manufacturing methods for core
- Design optimization methods



3 Stator Winding

Learn motor winding design and build your own stator winding:

- Understanding winding parameters
- Use our winding assistant apps to build coils
- Use IEC standard winding diagrams
- Learn to estimate copper length and mass

Program Benefits

- Improved learning speed and retention
- Practical motor experience typically requiring years to develop
- Research-proven methodology
- Industry-ready graduates



4 Mechanical Assembly

Complete and test the mechanical assembly:

- Understand the issues of mechanical assembly of motor
- Balancing and mount the rotor, alignment
- Complete the motor winding connection to terminals



5 Drive System Integration

Connect motors to various drive systems:

- DOL (Direct-On-Line) connections
- Star-delta configurations
- Variable Frequency Drive (VFD) integration
- Safety and related issues



Supporting materials

Exhaustive supporting modules:

- Module 1 supported with Electromagnetic Simulator apps
- Module 4 supported with Winding Assistant Apps
- All modules come with structured worksheets & notes