



Tribhuvan University

Institute of Engineering

Pulchowk Campus

Unit: I- Introduction to Electric Drives

Class-01:

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Presented by

Dr. Rajesh M. Pindoriya

rajeshpindoriya@ieee.org

Website: rmpindoriya.weebly.com

Subject Name

EE: Modelling and Control of Electric Drives

Education Profile

Ph.D.

in Power
Electronics and
Electrical Drives
from Indian
Institute of
Technology Mandi
(IIT Mandi), India,
in 2020

M.E.

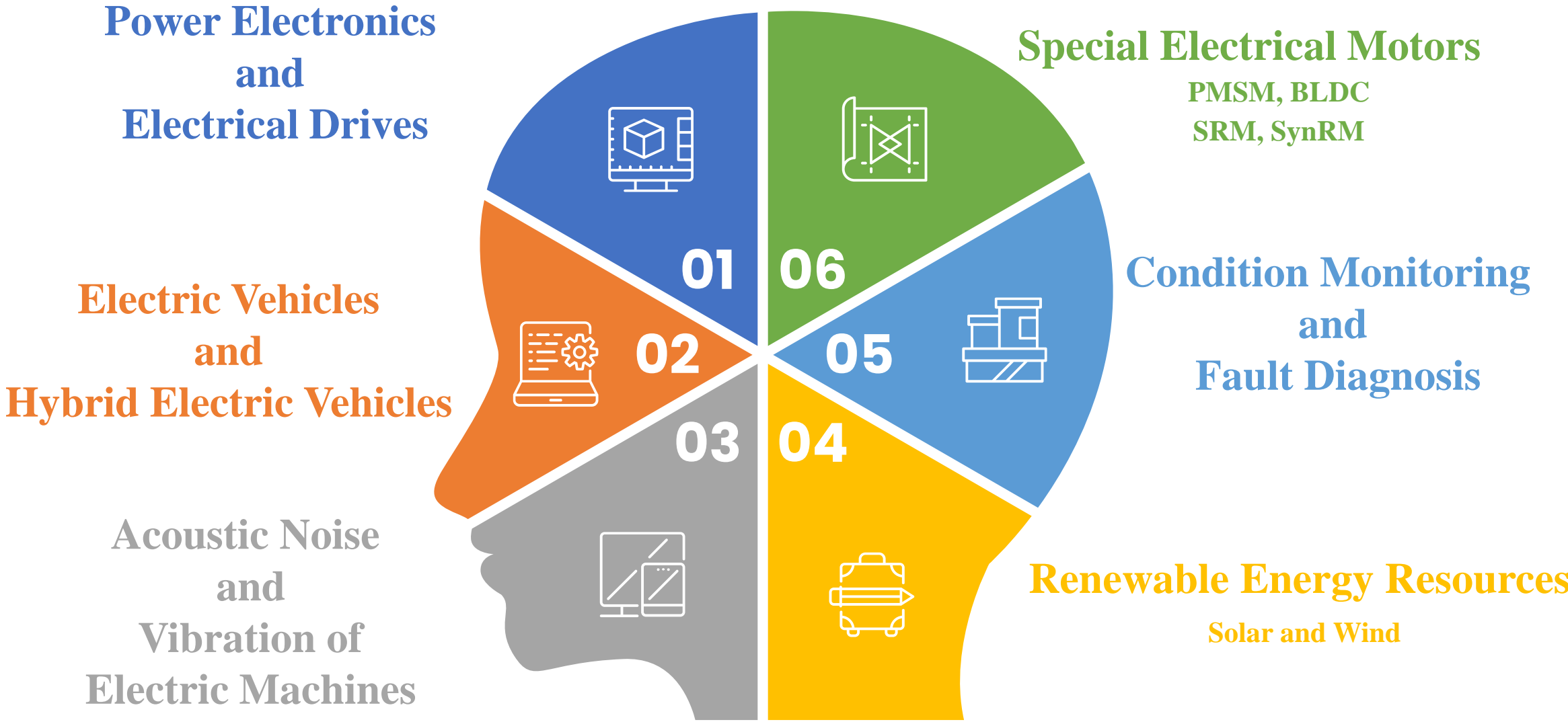
in Power Electronics
and Electrical Drives
from Gujarat
Technological
University,
Ahmedabad, Gujarat,
India in 2014

B.Tech.

in Electrical and
Electronics
Engineering from
Rajasthan Technical
University Kota,
Rajasthan, India in
2012



Research Domain



**Power Electronics
and
Electrical Drives**

**Electric Vehicles
and
Hybrid Electric Vehicles**

**Acoustic Noise
and
Vibration of
Electric Machines**

Special Electrical Motors
PMSM, BLDC
SRM, SynRM

**Condition Monitoring
and
Fault Diagnosis**

Renewable Energy Resources
Solar and Wind

Course Evaluation Scheme

Sr. No.	Evaluation Elements	Weightage (%)
1	Internal Assessment	20
2	Assignments: MATLAB/Simulink	20
3	Final Semester Exam (Conducted by IOE)	60

- **A minimum of 75% attendance is compulsory to appear for the exams.**
- **Total Internal assessment marks=40 (both 1 &2) and Pass marks=20.**
- **Students who passed the internal assessment can only appear in the final semester exam (conducted by IOE Exam Division).**

Reference Books

1. Dubey, G.K., Fundamentals of Electric Drives, Narosa Publications (2001).
2. Dubey, G.K., Power Semiconductor Controlled Drives, Prentice Hall Inc. (1989).
3. Rama Krishnan: Electric motor drives: modelling, analysis, and control, Pearson Education India; 1st ed., 2015.
4. A. E. Fitzgerald, Charles Kingsley, Stephen D. Umans: Electric Machinery, TMH, 6th ed., 2017.
5. Bose, B.K., Modern Power Electronics and AC Drives, Prentice-Hall of India Private Limited (2006).

Applications of Power Electronics and Electric Drives

Definition of electric drive

- ❖ “Systems employed for motion control are called **drives**”
- ❖ “Drives employing electric motors are known as **electrical drives**”

Why its required

- ❖ To control the speed and torque of the electric motors

Applications of electric drives



Air condition



Celling fan



Refrigerator



Lift

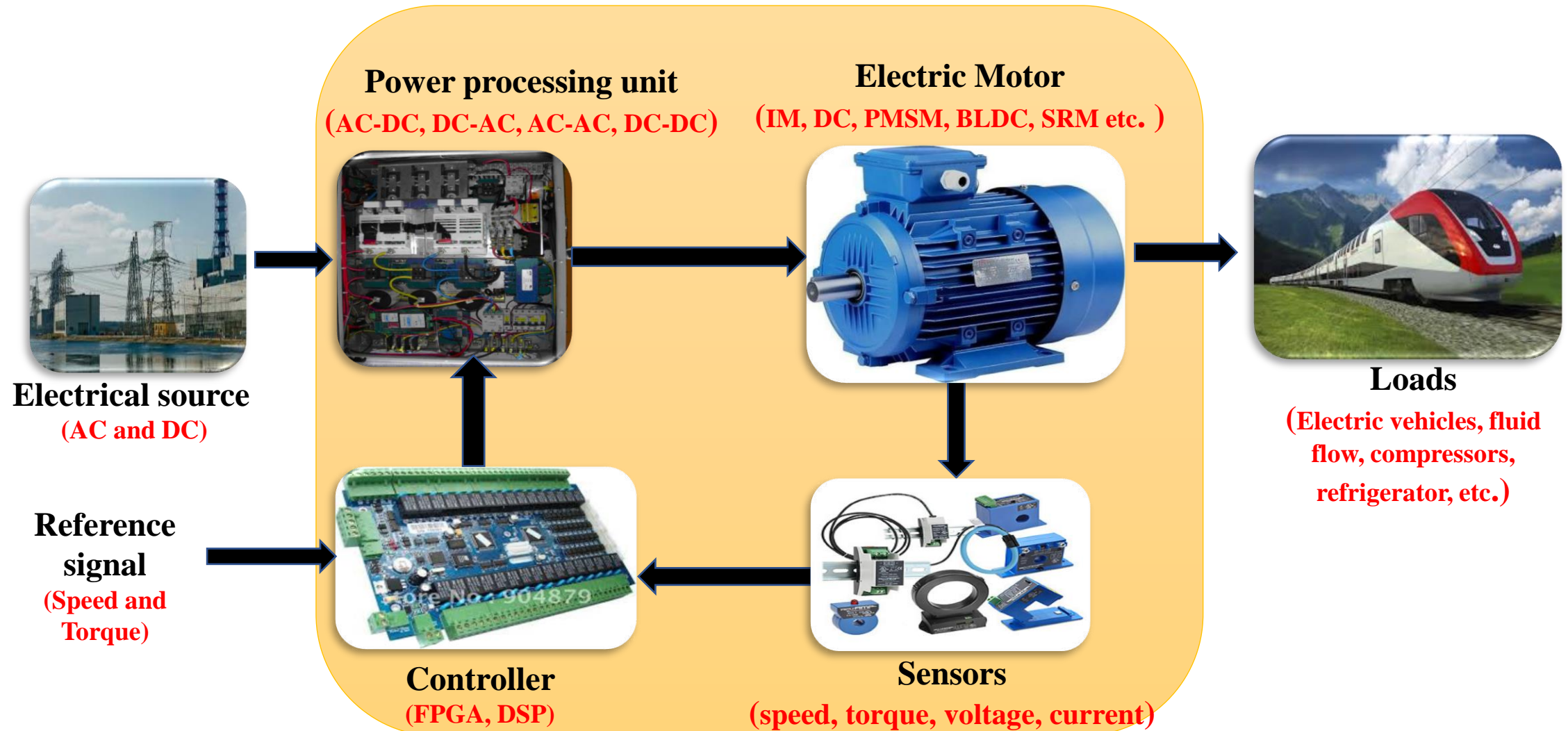


Vacuumed cleaner



Ship

Components of Electric Drives



Key Points from Today's Class

- ❖ Discuss Syllabus
- ❖ Course Evolution Scheme
- ❖ Introduction to Power Electronics and Electric Drives

Thank you so much for your attentions
Q & A