

Course outline

How does an NPTEL online course work?

Module 1 - Overview of Electric Vehicles in India

Module 2 - Vehicle Dynamics

Module 2 and 3 - Vehicle Dynamics and EV Subsystems

Module 4 - Storage for EVs

Module 4 - Storage for EVs (contd)

Module 5 - Fundamentals of battery pack design

Module 5 and 6 - Battery Pack Design, Motors and Controllers

Module 6 - EV Motors and Controllers

- Lecture 58 - Torque Production - Part 1

- Lecture 59 - Torque Production - Part 2

- Lecture 60 - Torque Production - Part 3

- Lecture 61 - Speed and Back EMF

- Lecture 62 - The d-q Equivalent circuit - Part 1

- Lecture 63 - The d-q Equivalent circuit - Part 2

- Lecture 64 - Field-oriented Control

- Lecture 65 - Three phase AC - Part 1

- Lecture 66 - Three phase AC - Part 2

- Lecture 67 - Thermal Design - Part 1

- Lecture 68 - Thermal Design - Part 2

- Lecture 69 - Thermal Design - Part 3

- Lecture 70 - Engineering Considerations - Part 1

- Lecture 71 - Engineering Considerations - Part 2

- Lecture 72 - Future Frontiers

- Quiz: Week 8: Assignment 1

- Quiz: Week 8: Assignment 2

- Quiz: Week 8: Assignment 3**

- Quiz: Week 8: Assignment 4

- Week 8: Feedback form: Electric Vehicles and Renewable Energy

- Week 8: Lecture notes

- Week 8: Solutions

Module 7&8 - Battery Charging and Swapping, Analytics

Module 9: Renewable Energy - Introduction

Part 2

- Lecture 69 - Thermal Design - Part 3

- Lecture 70 - Engineering Considerations - Part 1

- Lecture 71 - Engineering Considerations - Part 2

- Lecture 72 - Future Frontiers

- Quiz: Week 8: Assignment 1

- Quiz: Week 8: Assignment 2

- Quiz: Week 8: Assignment 3**

- Quiz: Week 8: Assignment 4

- Week 8: Feedback form:

Week 8: Assignment 3

The due date for submitting this assignment has passed.

Due on 2021-09-22, 23:59 IST.

As per our records you have not submitted this assignment.

 1) What impact will a low-pass software filter - applied to the throttle signal - have on the vehicle behaviour? **1 point**

- Vehicle runs slower than desired
- Vehicle responds jerkily to change in throttle
- Vehicle responds slowly to change in throttle
- None of the above.

 No, the answer is incorrect.
Score: 0

 Accepted Answers:
Vehicle responds slowly to change in throttle

A motor is powered by a 48V battery

 2) What is the maximum RMS line voltage that can be applied? (Choose the value nearest) **1 point**

- 67.9 V
- 33.9 V
- 23.5 V
- 97.9 V

 No, the answer is incorrect.
Score: 0

 Accepted Answers:
33.9 V

 3) What is the maximum RMS phase voltage that can be applied? (Choose the value nearest) **1 point**

- 67.9 V
- 19.6 V
- 24.0 V
- 97.9 V

 No, the answer is incorrect.
Score: 0

 Accepted Answers:
19.6 V

 A motor powered by a 48 V DC battery is of 6-pole construction with a back-emf constant $K_b = 8 \text{ V/K-rpm}$ (Line voltage, RMS).

 4) What is the maximum no-load speed it can be run at, without flux weakening? (Choose the nearest value) **1 point**

- 2450
- 6000
- 4238
- 2937

 No, the answer is incorrect.
Score: 0

 Accepted Answers:
4238

 5) What is the frequency of the voltage at this speed? (Choose the nearest value) **1 point**

- 147 Hz
- 300 Hz
- 123 Hz
- 212 Hz

 No, the answer is incorrect.
Score: 0

 Accepted Answers:
212 Hz

 Accepted Answers:
4238

 5) What is the frequency of the voltage at this speed? (Choose the nearest value) **1 point**

- 147 Hz
- 300 Hz
- 123 Hz
- 212 Hz

 No, the answer is incorrect.
Score: 0

 Accepted Answers:
212 Hz