

# Fundamentals of Electrical Engineering (Online)

(Minor Degree)

**Course Code:**

**L T P C**

**2 0 0 2**

**Floated by: Swayam**

**Offered by: IIT Kharagpur**

**Instructor: Prof. Debapriya Das**

**Duration: 12 weeks**

**Prerequisites: NIL**

## **COURSE LAYOUT:**

**Week 1:** Basic Concepts and Basic Laws

**Week 2:** Methods of Analysis

**Week 3:** DC Network Theorems

**Week 4:** Capacitors and Inductors and First Order Circuits

**Week 5:** Sinusoidal and Phasors

**Week 6:** Sinusoidal Steady-State Analysis

**Week 7:** AC Circuit Analysis and Network Theorems

**Week 8:** Series and Parallel Resonance and Magnetically Coupled Circuits

**Week 9:** Three Phase Circuits and Power Measurements

**Week 10:** Single Phase Transformers

**Week 11:** Three Phase Induction Machines

**Week 12:** DC Machines

## **BOOKS AND REFERENCES**

1. Fundamentals of Electric Circuits— C.K. Alexander and M.N.O. Sadiku ( TATA McGraw-Hill )
2. Electrical Engineering: Principles and Applications- Allan R. Hambley ( Pearson Education )
3. Electric Machines- Charles I. Hubert ( Pearson education )
4. Electrical Machines- M.V. Deshpande ( Wheeler Publishing ) Engineering Circuit Analysis- W.H.Hayt and J.E. Kemmerly ( McGraw-Hill )

## **WEB LINK:**

[https://onlinecourses.nptel.ac.in/noc21\\_ee73/preview](https://onlinecourses.nptel.ac.in/noc21_ee73/preview)