



## COLLEGE OF ENGINEERING BHUBANESWAR (COEB)

Koustuv Technical Campus, Plot No. 1 (A), Koustuv Square,  
Infocity Road, Patia, Bhubaneswar-751024, Odisha, India

[AFFILIATED TO BPUT, ODISHA]

[www.coeb.ac.in](http://www.coeb.ac.in)

### ADD-ON COURSE : Concepts of Transformer Core Design

[Programme: B.Tech, EEE/EE]

### SYLLABUS

Total Lecture Hours : 40

#### Course Objectives:

This course provides a comprehensive understanding of transformer core design principles, including magnetic materials, core types, core design calculations, and practical considerations. Students will learn how to design transformer cores to meet specific performance requirements and efficiency standards.

#### MODULE-I Introduction to Transformer Core Design

[12 Hours]

Overview of transformers and their significance, Role of the core in transformer operation, Importance of efficient core design, Magnetic Materials for Transformer Cores, Properties of magnetic materials (ferromagnetic, ferrimagnetic), Selection criteria for core materials, Hysteresis and magnetic losses in core materials.

#### MODULE-II Core Types and Geometries

[12 Hours]

Core types: laminated, toroidal, shell, and others, Core geometry and winding configurations, Pros and cons of different core types, Magnetic Circuit Analysis, Magnetic field, flux, and magnetomotive force (MMF), Magnetic circuit analysis in transformers, Calculation of core cross-sectional area and magnetic path length.

#### MODULE-III Core Losses and Efficiency

[12 Hours]

Core loss mechanisms: hysteresis and eddy current losses, Core loss calculations, Impacts of core design on transformer efficiency, Magnetizing Current and Voltage Regulation, Magnetizing current and its role in transformer operation, Voltage regulation and magnetizing reactance, Design considerations for controlling magnetizing current.

#### MODULE-IV Practical Aspects of Transformer Core Design

[04 Hours]

Manufacturing considerations, Cooling and insulation, Noise and vibration control in transformer cores.

**Course Outcomes:** After completion of the course, the students will be able to

CO1: Understand the fundamental concepts of transformer operation and design.

CO2: Analyze and design transformer cores for various applications.

CO3: Evaluate different core materials and their impact on performance.

CO4: Perform core loss and magnetizing current calculations.

CO5: Consider practical aspects, such as manufacturing and cooling, in transformer core design.

#### Evaluation Process:

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1. Attendance for the course is 75%, which is mandatory.
2. Minimum qualifying marks percentage for the course is 50.
3. Certificate will be issued after successful completion of course and assessment processes.

**Learning resources:**

**Suggested Books:**


1. "Transformer Engineering: Design, Technology, and Diagnostics" by S.V. Kulkarni and S.A. Khaparde.
2. K. R. M. Nair, *Power & Distribution Transformers: Practical Design Guide*, CRC Press, Page 497, 2021.
3. Fang Zhu, Baitun Yang, *Power Transformer Design Practices*, CRC Press, Pages 282, 2021.


**Other Sources:**


**e-Learning Resources:**

<https://www.tipsengineerzone.in/2023/08/transformer-design-calculation-course.html>

Design and Developed by: Dr B. Veera Murthy Pandian & Prof. Eepsita Shridevi

  
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HOD, Electrical Engineering  
HOD  
Electrical Engineering  
College of Engineering Bhubaneswar



# COLLEGE OF ENGINEERING BHUBANESWAR

Plot No.1 (A), CNI Complex, Patia, Bhubaneswar – 751024, Odisha, India.

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## NOTICE

### Department of Electrical Engineering Add On Course 2021-2022

Ref No: COEB/EE/2021/16

Date: 24.11.2021

It is hereby informed to all the students that the Department of Electrical Engineering is going to start the following Add-on courses for Academic year 2021-2022. All the students are instructed to enroll their names for the following courses on or before 04.12.2021. The classes will be commenced from **06/12/2021**, 5.30pm to 7.30pm. You can contact the following course co-ordinators for enrolment and further queries.


Sl. No.	Name of Add-on Course	Sem	Duration in hours	Name of the course co-ordinators
1	Electrical Circuit Analysis with PSIM	3 <sup>rd</sup>	40	Dr. N Veda Kumar, Assistant Professor
2	Fault Analysis of Electrical Transmission System	5 <sup>th</sup>	40	Debarpita Roul, Assistant Professor
3	Concepts of transformer core design	7 <sup>th</sup>	40	Dr. Prakash Chandra Sahu, Assistant Professor

  
HOD

Electrical Engineering Department

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Electrical Engineering  
College of Engineering Bhubaneswar

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**COLLEGE OF ENGINEERING BHUBANESWAR (COEB)  
ADD-ON COURSE**

**STUDENT ENROLLMENT SHEET**


<b>Name of the Department:</b> ELECTRICAL ENGINEERING	
<b>Course Title:</b> Concepts of transformer core design	
<b>Semester :</b> 7th	<b>Academic Year:</b> 2021-22

Student's Declaration/Undertaking

1. I do hereby undertake to participate in the above mentioned add on course.
2. I do hereby, promise to abide by the admissible rules and regulations, concerning discipline, attendance, etc. of the department, and also to follow the Code of Conduct prescribed for the students of the Institute, as in force from time to time.

Sl. No.	Registration No.	Name of the Student	Signature of the Student
1	1801219004	ALOK BEHERA	Alok Behera
2	1801219016	ASHIS ASUTOSH PRADHAN	Ashis Asutosh Pradhan
3	1801219038	CHANDAN MALIK	Chandan Malik
4	1801219075	MANAS PURTTY	Manas PurTTY
5	1801219076	MANAS RANJAN DALAI	Manas Ranjan Dalai
6	1801219085	NALIN SURIN	Nalin Surin
7	1801219098	PRAKASH RANA	Prakash Rana
8	1801219100	PRASANTA PATRA	Prasanta Patra
9	1801219104	PREMJYOTI SURYAKANTA OJHA	Premjyoti Suryakanta Ojha
10	1801219118	RAKESH PRADHAN	Rakesh Pradhan
11	1801219132	SANTOSH KUMAR MALIK	Santosh Kumar Malik
12	1801219153	SOUMYA RANJAN SAHOO	Soumya Ranjan Sahoo
13	1801219164	SUVENDU SOURAV PRADHAN	Suvendu Sourav Pradhan
14	1801219173	VIKASH KUMAR	Vikash Kumar



  
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COLLEGE OF ENGINEERING BHUBANESWAR (COEB)  
DEPARTMENT OF ELECTRICAL ENGINEERING

ADD ON/CERTIFICATE COURSE

STUDENT ATTENDANCE

Sheet No. 04

Programme: B.Tech in Electrical Engineering

Semester: 7th

Academic Year: 2021-22

Name of the Course: Concepts of transformer core design

Course Code (if any):

Duration : 5:30PM - 7:30PM

Date & Signature of the Student

Sl. NO.	Reg. No./ Enrollment No.	NAME OF THE STUDENT	Date:	Date:	Date:	Date:
1	1801219004	ALOK BEHERA	Alok Behera	Alok Behera	Alok Behera	Alok Behera
2	1801219016	ASHIS ASUTOSH PRADHAN	Ashis Asutosh Pradhan	Ashis Asutosh Pradhan	Ashis Asutosh Pradhan	Ashis Asutosh Pradhan
3	1801219038	CHANDAN MALIK	Chandan Malik	Chandan Malik	Chandan Malik	Chandan Malik
4	1801219075	MANAS PURTTY	Manas Purthy	Manas Purthy	Manas Purthy	Manas Purthy
5	1801219076	MANAS RANJAN DALAI	Manas Ranjan Dalai	Manas Ranjan Dalai	Manas Ranjan Dalai	Manas Ranjan Dalai
6	1801219085	NALIN SURIN	Nalin Surin	Nalin Surin	Nalin Surin	Nalin Surin
7	1801219098	PRAKASH RANA	Prakash Rana	Prakash Rana	Prakash Rana	Prakash Rana
8	1801219100	PRASANTA PATRA	Prasanta Patra	Prasanta Patra	Prasanta Patra	Prasanta Patra
9	1801219104	PREMIYOTI SURYAKANTA OIHA	Premiyoti Suryakanta OIHA	Premiyoti Suryakanta OIHA	Premiyoti Suryakanta OIHA	Premiyoti Suryakanta OIHA
10	1801219118	RAKESH PRADHAN	Rakesh Pradhan	Rakesh Pradhan	Rakesh Pradhan	Rakesh Pradhan
11	1801219132	SANTOSH KUMAR MALIK	Santosh Kumar Malik	Santosh Kumar Malik	Santosh Kumar Malik	Santosh Kumar Malik
12	1801219153	SOUNMYA RANJAN SAHOO	Soumya Ranjan Sahoo	Soumya Ranjan Sahoo	Soumya Ranjan Sahoo	Soumya Ranjan Sahoo
13	1801219164	SUVENDU SOURAV PRADHAN	Suvendu Sourav Pradhan	Suvendu Sourav Pradhan	Suvendu Sourav Pradhan	Suvendu Sourav Pradhan
14	1801219173	VIKASH KUMAR	Vikash Kumar	Vikash Kumar	Vikash Kumar	Vikash Kumar
Signature of the Course Coordinator						

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DEPARTMENT OF ELECTRICAL ENGINEERING

ADD ON / CERTIFICATE COURSE

STUDENT ATTENDANCE

Sheet No. 05

Programme: **B.Tech in Electrical Engineering**

Semester: **7th**

Academic Year: **2021-22**

Name of the Course: Concepts of transformer core design

Course Code (if any):

Duration : **5:30 PM - 7:30 PM**

Date & Signature of the Student

Sl. No.	Reg. No./ Enrollment No.	NAME OF THE STUDENT	Date:	Date:	Date:	Date:
1	1801219004	ALOK BEHERA	Alok Behera	Alok Behera	Alok Behera	Alok Behera
2	1801219016	ASHIS ASUTOSH PRADHAN	Ashis Asutosh Pradhan	Ashis Asutosh Pradhan	Ashis Asutosh Pradhan	Ashis Asutosh Pradhan
3	1801219038	CHANDAN MALIK	Chandan Malik	Chandan Malik	Chandan Malik	Chandan Malik
4	1801219075	MANAS PURTTY	Manas Purthy	Manas Purthy	Manas Purthy	Manas Purthy
5	1801219076	MANAS RANJAN DALAI	Manas Ranjan Dalai	Manas Ranjan Dalai	Manas Ranjan Dalai	Manas Ranjan Dalai
6	1801219085	NALIN SURIN	Nalin Surin	Nalin Surin	Nalin Surin	Nalin Surin
7	1801219098	PRAKASH RANA	Prakash Rana	Prakash Rana	Prakash Rana	Prakash Rana
8	1801219100	PRASANTA PATRA	Prasanta Patra	Prasanta Patra	Prasanta Patra	Prasanta Patra
9	1801219104	PREMIYOTI SURYAKANTA OIHA	Premiyoti Suryakanta OIHA	Premiyoti Suryakanta OIHA	Premiyoti Suryakanta OIHA	Premiyoti Suryakanta OIHA
10	1801219118	RAKESH PRADHAN	Rakesh Pradhan	Rakesh Pradhan	Rakesh Pradhan	Rakesh Pradhan
11	1801219132	SANTOSH KUMAR MALIK	Santosh Kumar Malik	Santosh Kumar Malik	Santosh Kumar Malik	Santosh Kumar Malik
12	1801219153	SOUNMYA RANJAN SAHOO	Sounmya Ranjan Sahu	Sounmya Ranjan Sahu	Sounmya Ranjan Sahu	Sounmya Ranjan Sahu
13	1801219164	SUVENDU SOURAV PRADHAN	Suwendu Sourav Pradhan	Suwendu Sourav Pradhan	Suwendu Sourav Pradhan	Suwendu Sourav Pradhan
14	1801219173	VIKASH KUMAR	Vikash Kumar	Vikash Kumar	Vikash Kumar	Vikash Kumar

Signature of the Course Coordinator

*[Signature]*

*[Signature]*

*[Signature]*

*[Signature]*

*[Signature]*  
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DEPARTMENT OF ELECTRICAL ENGINEERING  
ADD ON/ CERTIFICATE COURSE

STUDENT ATTENDANCE

Sheet No. 01

Programme: B.Tech in Electrical Engineering

Semester: 7th

Academic Year: 2021-22

Name of the Course: Concepts of transformer core design

Course Code (if any):

Duration : 5:30PM - 7:30PM

Sl. NO.	Reg. No./ Enrollment No.	NAME OF THE STUDENT	Date: 06/12/21	Date: 07/12/21	Date: 08/12/21	Date: 09/12/21
1	1801219004	ALOK BEHERA	Alok Behera	Alok Behera	Alok Behera	Alok Behera
2	1801219016	ASHIS ASUTOSH PRADHAN	Ashis Asutosh Pradhan	Ashis Asutosh Pradhan	Ashis Asutosh Pradhan	Ashis Asutosh Pradhan
3	1801219038	CHANDAN MALIK	Chandan Malik	Chandan Malik	Chandan Malik	Chandan Malik
4	1801219075	MANAS PURTTY	Manas Purthy	Manas Purthy	Manas Purthy	Manas Purthy
5	1801219076	MANAS RANJAN DALAI	Manas Ranjan Dalai	Manas Ranjan Dalai	Manas Ranjan Dalai	Manas Ranjan Dalai
6	1801219085	NALIN SURIN	Nalin Surin	Nalin Surin	Nalin Surin	Nalin Surin
7	1801219098	PRAKASH RANA	Prakash Rana	Prakash Rana	Prakash Rana	Prakash Rana
8	1801219100	PRASANTA PATRA	Prasanta Patra	Prasanta Patra	Prasanta Patra	Prasanta Patra
9	1801219104	PREMIYOTI SURYAKANTA OJHA	Premyoti Suryakanta Ojha	Premyoti Suryakanta Ojha	Premyoti Suryakanta Ojha	Premyoti Suryakanta Ojha
10	1801219118	RAKESH PRADHAN	Rakesh Pradhan	Rakesh Pradhan	Rakesh Pradhan	Rakesh Pradhan
11	1801219132	SANTOSH KUMAR MALIK	Santosh Kumar Malik	Santosh Kumar Malik	Santosh Kumar Malik	Santosh Kumar Malik
12	1801219153	SOUMYA RANJAN SAHOO	Soumya Ranjan Sahu	Soumya Ranjan Sahu	Soumya Ranjan Sahu	Soumya Ranjan Sahu
13	1801219164	SUVENDU SOURAV PRADHAN	Suvendu Sourav Pradhan	Suvendu Sourav Pradhan	Suvendu Sourav Pradhan	Suvendu Sourav Pradhan
14	1801219173	VIKASH KUMAR	Vikash Kumar	Vikash Kumar	Vikash Kumar	Vikash Kumar
Signature of the Course Coordinator						

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DEPARTMENT OF ELECTRICAL ENGINEERING**

ADD ON/CERTIFICATE COURSE

**STUDENT ATTENDANCE**

Sheet No. 02

Programme: **B.Tech in Electrical Engineering**

Semester: **7th**

Academic Year: **2021-22**

Name of the Course: Concepts of transformer core design

Course Code (if any):

Duration : **5:30PM-7:30PM**

Sl. NO.	Reg. No./ Enrollment No.	NAME OF THE STUDENT	Date & Signature of the Student					
			Date:	Signature	Date:	Signature		
1	1801219004	ALOK BEHERA	Date: 10/12/21 Alok Behera	Alok Behera	Date: 13/12/21 Alok Behera	Alok Behera	Date: 14/12/21 Alok Behera	Date: 15/12/21 Alok Behera
2	1801219016	ASHIS ASUTOSH PRADHAN	Date: 10/12/21 Ashis Asutosh Pradhan	Ashis Asutosh Pradhan	Date: 13/12/21 Ashis Asutosh Pradhan	Ashis Asutosh Pradhan	Date: 14/12/21 Ashis Asutosh Pradhan	Date: 15/12/21 Ashis Asutosh Pradhan
3	1801219038	CHANDAN MALIK	Date: 10/12/21 Chandan Malik	Chandan Malik	Date: 13/12/21 Chandan Malik	Chandan Malik	Date: 14/12/21 Chandan Malik	Date: 15/12/21 Chandan Malik
4	1801219075	MANAS PURTTY	Date: 10/12/21 Manas PurTTY	Manas PurTTY	Date: 13/12/21 Manas PurTTY	Manas PurTTY	Date: 14/12/21 Manas PurTTY	Date: 15/12/21 Manas PurTTY
5	1801219076	MANAS RANJAN DALAI	Date: 10/12/21 Manas Ranjan Dalai	Manas Ranjan Dalai	Date: 13/12/21 Manas Ranjan Dalai	Manas Ranjan Dalai	Date: 14/12/21 Manas Ranjan Dalai	Date: 15/12/21 Manas Ranjan Dalai
6	1801219085	NALIN SURIN	Date: 10/12/21 Nalin Surin	Nalin Surin	Date: 13/12/21 Nalin Surin	Nalin Surin	Date: 14/12/21 Nalin Surin	Date: 15/12/21 Nalin Surin
7	1801219098	PRAKASH RANA	Date: 10/12/21 Prakash Rana	Prakash Rana	Date: 13/12/21 Prakash Rana	Prakash Rana	Date: 14/12/21 Prakash Rana	Date: 15/12/21 Prakash Rana
8	1801219100	PRASANTA PATRA	Date: 10/12/21 Prasanta Patra	Prasanta Patra	Date: 13/12/21 Prasanta Patra	Prasanta Patra	Date: 14/12/21 Prasanta Patra	Date: 15/12/21 Prasanta Patra
9	1801219104	PREMIYOTI SURYAKANTA OJHA	Date: 10/12/21 Premiyoti Suryakanta Ojha	Premiyoti Suryakanta Ojha	Date: 13/12/21 Premiyoti Suryakanta Ojha	Premiyoti Suryakanta Ojha	Date: 14/12/21 Premiyoti Suryakanta Ojha	Date: 15/12/21 Premiyoti Suryakanta Ojha
10	1801219118	RAKESH PRADHAN	Date: 10/12/21 Rakesh Pradhan	Rakesh Pradhan	Date: 13/12/21 Rakesh Pradhan	Rakesh Pradhan	Date: 14/12/21 Rakesh Pradhan	Date: 15/12/21 Rakesh Pradhan
11	1801219132	SANTOSH KUMAR MALIK	Date: 10/12/21 Santosh Kumar Malik	Santosh Kumar Malik	Date: 13/12/21 Santosh Kumar Malik	Santosh Kumar Malik	Date: 14/12/21 Santosh Kumar Malik	Date: 15/12/21 Santosh Kumar Malik
12	1801219153	SOUMYA RANJAN SAHOO	Date: 10/12/21 Soumya Ranjan Sahoo	Soumya Ranjan Sahoo	Date: 13/12/21 Soumya Ranjan Sahoo	Soumya Ranjan Sahoo	Date: 14/12/21 Soumya Ranjan Sahoo	Date: 15/12/21 Soumya Ranjan Sahoo
13	1801219164	SUVENDU SOURAV PRADHAN	Date: 10/12/21 Suvendu Sourav Pradhan	Suvendu Sourav Pradhan	Date: 13/12/21 Suvendu Sourav Pradhan	Suvendu Sourav Pradhan	Date: 14/12/21 Suvendu Sourav Pradhan	Date: 15/12/21 Suvendu Sourav Pradhan
14	1801219173	VIKASH KUMAR	Date: 10/12/21 Vikash Kumar	Vikash Kumar	Date: 13/12/21 Vikash Kumar	Vikash Kumar	Date: 14/12/21 Vikash Kumar	Date: 15/12/21 Vikash Kumar
Signature of the Course Coordinator			<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>

*[Signature]*  
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**COLLEGE OF ENGINEERING BHUBANESWAR (COEB)**  
**DEPARTMENT OF ELECTRICAL ENGINEERING**  
 ADD ON/CERTIFICATE COURSE

**STUDENT ATTENDANCE**

Sheet No. 03

Programme: **B.Tech in Electrical Engineering** Semester: **7th** Academic Year: **2021-22**  
 Name of the Course: Concepts of transformer core design Course Code (if any):

Sl. NO.	Reg. No./ Enrollment No.	NAME OF THE STUDENT	Date & Signature of the Student							
			Date:	Signature	Date:	Signature				
1	1801219004	ALOK BEHERA	16/12/21	Alok Behera	17/12/21	Alok Behera	20/12/21	Alok Behera	21/12/21	Alok Behera
2	1801219016	ASHIS ASUTOSH PRADHAN	16/12/21	Ashis Asutosh Pradhan	17/12/21	Ashis Asutosh Pradhan	20/12/21	Ashis Asutosh Pradhan	21/12/21	Ashis Asutosh Pradhan
3	1801219038	CHANDAN MALIK	16/12/21	Chandan Malik	17/12/21	Chandan Malik	20/12/21	Chandan Malik	21/12/21	Chandan Malik
4	1801219075	MANAS PURTTY	16/12/21	Manas PurTTY	17/12/21	Manas PurTTY	20/12/21	Manas PurTTY	21/12/21	Manas PurTTY
5	1801219076	MANAS RANJAN DALAI	16/12/21	Manas Ranjan Dalai	17/12/21	Manas Ranjan Dalai	20/12/21	Manas Ranjan Dalai	21/12/21	Manas Ranjan Dalai
6	1801219085	NALIN SURIN	16/12/21	Nalin Surin	17/12/21	Nalin Surin	20/12/21	Nalin Surin	21/12/21	Nalin Surin
7	1801219098	PRAKASH RAMA	16/12/21	Prakash Rama	17/12/21	Prakash Rama	20/12/21	Prakash Rama	21/12/21	Prakash Rama
8	1801219100	PRASANTA PATRA	16/12/21	Prasanta Patra	17/12/21	Prasanta Patra	20/12/21	Prasanta Patra	21/12/21	Prasanta Patra
9	1801219104	PREMIYOTI SURYAKANTA OIHA	16/12/21	Premiyoti Suryakanta OIHA	17/12/21	Premiyoti Suryakanta OIHA	20/12/21	Premiyoti Suryakanta OIHA	21/12/21	Premiyoti Suryakanta OIHA
10	1801219118	RAKESH PRADHAN	16/12/21	Rakesh Pradhan	17/12/21	Rakesh Pradhan	20/12/21	Rakesh Pradhan	21/12/21	Rakesh Pradhan
11	1801219132	SANTOSH KUMAR MALIK	16/12/21	Santosh Kumar Malik	17/12/21	Santosh Kumar Malik	20/12/21	Santosh Kumar Malik	21/12/21	Santosh Kumar Malik
12	1801219153	SOUMYA RANJAN SAHOO	16/12/21	Soumya Ranjan Sahoo	17/12/21	Soumya Ranjan Sahoo	20/12/21	Soumya Ranjan Sahoo	21/12/21	Soumya Ranjan Sahoo
13	1801219164	SUVENDU SOURAV PRADHAN	16/12/21	Suvendu Sourav Pradhan	17/12/21	Suvendu Sourav Pradhan	20/12/21	Suvendu Sourav Pradhan	21/12/21	Suvendu Sourav Pradhan
14	1801219173	VIKASH KUMAR	16/12/21	Vikash Kumar	17/12/21	Vikash Kumar	20/12/21	Vikash Kumar	21/12/21	Vikash Kumar
Signature of the Course Coordinator										

  
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**COLLEGE OF ENGINEERING BHUBANESWAR**  
PLOT NO-1(A), CNI COMPLEX, PATIA, BHUBANESWAR, KHORDHA, ODISHA-751024



# *Certificate of Completion*

This is to certify that Mr./Ms. ALOK BEHERA, student of the Department  
of Electrical Engg. semester Seventh bearing registration number 1801219004  
has successfully completed the ADD-ON Course titled Concepts of Transformer Core Design  
conducted at College of Engineering Bhubaneswar in the academic year 2021-22.

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Course-Cordinator

  
Principal



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PLOT NO-1(A), CNI COMPLEX, PATIA, BHUBANESWAR, KHORDHA, ODISHA-751024



# *Certificate of Completion*

This is to certify that Mr./Ms. CHANDAN MALIK, student of the Department  
of Electrical Engg. semester Seventh bearing registration number 1801219038  
has successfully completed the ADD-ON Course titled Concepts of Transformer Core Design  
conducted at College of Engineering Bhubaneswar in the academic year 2021-22.

**TRUE COPY**

Course-Coordinator

Principal

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**COLLEGE OF ENGINEERING BHUBANESWAR**  
PLOT NO-1(A), CNI COMPLEX, PATIA, BHUBANESWAR, KHORDHA, ODISHA-751024



# *Certificate of Completion*

This is to certify that Mr./Ms. MANAS PURTTY, student of the Department

of Electrical Engg. semester Seventh bearing registration number 1801219075

has successfully completed the ADD-ON Course titled Concepts of Transformer Core Design

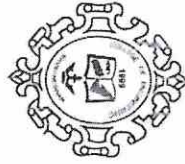
conducted at College of Engineering Bhubaneswar in the academic year 2021-22

**TRUE COPY**

Course-Coordinator

Principal

PRINCIPAL  
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**COLLEGE OF ENGINEERING BHUBANESWAR**  
PLOT NO-1(A), CNI COMPLEX, PATIA, BHUBANESWAR, KHORDHA, ODISHA-751024



# Certificate of Completion

This is to certify that Mr./Ms. MANAS RANJAN DALAI, student of the Department

of Electrical Engg. semester Seventh bearing registration number 1801219076

has successfully completed the ADD-ON Course titled Concepts of Transformer Core Design

conducted at College of Engineering Bhubaneswar in the academic year 2021-22.

**TRUE COPY**

Course-Coordinator

Principal

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PLOT NO-1(A), CNI COMPLEX, PATIA, BHUBANESWAR, KHORDHA, ODISHA-751024



# *Certificate of Completion*

This is to certify that Mr./Ms. NALIN SURIN, student of the Department

of Electrical Engg. semester Seventh bearing registration number 1801219085

has successfully completed the ADD-ON Course titled Concepts of Transformer Core Design

conducted at College of Engineering Bhubaneswar in the academic year 2021-22.

**TRUE COPY**

Course-Coordinator

Principal

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**COLLEGE OF ENGINEERING BHUBANESWAR (COEB)  
ADD-ON COURSE**

**STUDENT ENROLLMENT SHEET**


<b>Name of the Department:</b> ELECTRICAL AND ELECTRONICS ENGINEERING	
<b>Course Title:</b> Concepts of transformer core design	
<b>Semester :</b> 7th	<b>Academic Year:</b> 2021-22

Student's Declaration/Undertaking

1. I do hereby undertake to participate in the above mentioned add on course.
2. I do hereby, promise to abide by the admissible rules and regulations, concerning discipline, attendance, etc. of the department, and also to follow the Code of Conduct prescribed for the students of the Institute, as in force from time to time.

Sl. No.	Registration No.	Name of the Student	Signature of the Student
1	1801219001	ABHISHEK	Abhishek
2	1801219025	BHABANI SHANKAR MINZ	Bhabani Shankar minz
3	1801219028	BIBEKANANDA MOHARANA	Bibekamanda Moharana
4	1801219040	CHANDRACHUDA MAJHI	Chandrachudamajhi
5	1801219073	MAHIMA DANDASENA	Mahima Dandaseena
6	1801219093	OMKARNATH KHILAR	Omkarnath Khilar
7	1801219217	BISWANATH PRATAP JENA	Biswanath Pratap Jena
8	1801219218	MANTU NAYAK	Mantu Nayak
9	1801219219	NILESH CHAUDHARY	Nilesh Chaudhary
10	1801219220	PRAVATI NAYAK	Pravati Nayak
11	1801219221	SANDEEP BARLA	Sandeep Barla
12	1801219222	SATYABRATA PRADHAN	Satyabrata Pradhan
13	1801219223	SITAKANTA SAHOO	Sitakanta Sahoo
14	1801219224	SMRUTI RANJAN BISWAL	Smruti Ranjan Biswal
15	1801219225	SUSHMITA DALAI	Sushmita Dalai



  
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**COLLEGE OF ENGINEERING BHUBANESWAR (COEB)  
DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING**

ADD ON/CERTIFICATE COURSE

**STUDENT ATTENDANCE**

Sheet No. 01

Programme: **B.Tech in Electrical and Electronics Engineering**

Semester: **7th**

Academic Year: **2021-22**

Name of the Course: **Concepts of transformer core design**

Course Code (if any):

Duration : **(5.30 - 7.30) P<sub>3</sub>**

Date & Signature of the Student

Sl. NO.	Reg. No./ Enrollment No.	NAME OF THE STUDENT	Date:	Date:	Date:	Date:
1	1801219001	ABHISHEK	06/12/21	07/12/21	08/12/21	09/12/21
2	1801219025	BHABANI SHANKAR MINZ	Abhishek	Abhishek	Abhishek	Abhishek
3	1801219028	BIBEKANANDA MOHARANA	Bhabani S. minz	Bhabani S. minz	Bhabani S. minz	Bhabani S. minz
4	1801219040	CHANDRACHUDA MAJHI	Bibekamanda Moharana Chandrachudamajhi	Bibekamanda Moharana Chandrachudamajhi	Bibekamanda Moharana Chandrachudamajhi	Bibekamanda Moharana Chandrachudamajhi
5	1801219073	MAHIMA DANDASENA	Mahima Dandaseen	Mahima Dandaseen	Mahima Dandaseen	Mahima Dandaseen
6	1801219093	OMKARNATH KHLAR	Omkarnath Kilar	Omkarnath Kilar	Omkarnath Kilar	Omkarnath Kilar
7	1801219217	BISWANATH PRATAP JENA	Biswanath Pratap Jena	Biswanath Pratap Jena	Biswanath Pratap Jena	Biswanath Pratap Jena
8	1801219218	MANTU NAYAK	Mantu Nayak	Mantu Nayak	Mantu Nayak	Mantu Nayak
9	1801219219	NILESH CHAUDHARY	Nilesh Chaudhary	Abhis	Nilesh Chaudhary	Nilesh Chaudhary
10	1801219220	PRAVAITI NAYAK	Pravati Nayak	Pravati Nayak	Pravati Nayak	Pravati Nayak
11	1801219221	SANDEEP BARLA	Sandeep Barla	Sandeep Barla	Sandeep Barla	Sandeep Barla
12	1801219222	SATYABRATA PRADHAN	Abhis	Satyabrata Pradhan	Satyabrata Pradhan	Satyabrata Pradhan
13	1801219223	SITAKANTA SAHOO	Sitakant Sahoo	Sitakant Sahoo	Sitakant Sahoo	Sitakant Sahoo
14	1801219224	SMRUTI RANJAN BISWAL	Smruti Ranj Biswal	Smruti Ranj Biswal	Smruti Ranj Biswal	Smruti Ranj Biswal
15	1801219225	SUSHMITA DALAI	Sushmita Dalai	Sushmita Dalai	Sushmita Dalai	Sushmita Dalai

Signature of the Course Coordinator

*[Signature]*

*[Signature]*

*[Signature]*

*[Signature]*

*[Signature]*  
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**COLLEGE OF ENGINEERING BHUBANESWAR (COEB)  
DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING**

ADD ON / CERTIFICATE COURSE

**STUDENT ATTENDANCE**

Sheet No. 02

Programme: **B.Tech in Electrical and Electronics Engineering**

Semester: **7th**

Academic Year: **2021-22**

Name of the Course: **Concepts of transformer core design**

Course Code (if any):

Duration : **(530 - 730) Pm**

Date & Signature of the Student

SL. NO.	Reg. No./ Enrollment No.	NAME OF THE STUDENT	Date:	Date:	Date:	Date:
1	1801219001	ABHISHEK	10/12/21	13/12/21	14/12/21	15/12/21
2	1801219025	BHABANI SHANKAR MINZ	Abhishek	Abhishek	Abhishek	Abhishek
3	1801219028	BIBEKANANDA MOHARANA	Prabans s. minz	Prabans s. minz	Prabans s. minz	Prabans s. minz
4	1801219040	CHANDRACHUDA MAJHI	Bibek Kumar Malakar	Bibek Kumar Malakar	Bibek Kumar Malakar	Bibek Kumar Malakar
5	1801219073	MAHIMA DANDASENA	Chandrabudhan Majhi	Chandrabudhan Majhi	Chandrabudhan Majhi	Chandrabudhan Majhi
6	1801219093	OMKARNATH KHILAR	Mahima Dandaseen	Mahima Dandaseen	Mahima Dandaseen	Mahima Dandaseen
7	1801219217	BISWANATH PRATAP JENA	Omkar Nath Khilar	Omkar Nath Khilar	Omkar Nath Khilar	Omkar Nath Khilar
8	1801219218	MANITU NAYAK	Biswanath Pratap Jena	Biswanath Pratap Jena	Biswanath Pratap Jena	Biswanath Pratap Jena
9	1801219219	NILESH CHAUDHARY	Mantra Nayak	Mantra Nayak	Mantra Nayak	Mantra Nayak
10	1801219220	PRAVATI NAYAK	Nilesh Choudhary	Nilesh Choudhary	Nilesh Choudhary	Nilesh Choudhary
11	1801219221	SANDEEP BARLA	Pravati Nayak	Pravati Nayak	Pravati Nayak	Pravati Nayak
12	1801219222	SATYABRATA PRADHAN	Sandeep Barla	Sandeep Barla	Sandeep Barla	Sandeep Barla
13	1801219223	SITAKANTA SAHOO	Satyabrata Pradhan	Satyabrata Pradhan	Abi	Satyabrata Pradhan
14	1801219224	SMRUTI RANJAN BISWAL	Sitakanta Sahoo	Sitakanta Sahoo	Sitakanta Sahoo	Sitakanta Sahoo
15	1801219225	SUSHMITA DALAI	Smruti Ranjan Biswal	Smruti Ranjan Biswal	Smruti Ranjan Biswal	Smruti Ranjan Biswal
Signature of the Course Coordinator						

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**COLLEGE OF ENGINEERING BHUBANESWAR (COEB)**  
**DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING**

ADD ON / CERTIFICATE COURSE

**STUDENT ATTENDANCE**

Sheet No. 03

Programme: **B.Tech in Electrical and Electronics Engineering**

Semester: **7th**

Academic Year: **2021-22**

Name of the Course: **Concepts of transformer core design**

Course Code (if any):

Duration : **(5-30 - 7-30) Pm**

Date & Signature of the Student

Sl. NO.	Reg. No./ Enrollment No.	NAME OF THE STUDENT	Date: 16/12/21	Date: 17/12/21	Date: 20/12/21	Date: 21/12/21
1	1801219001	ABHISHEK	Abhishek	Abhishek	Abhishek	Abhishek
2	1801219025	BHABANI SHANKAR MINZ	Abhishek	Abhishek	Bhabani S. Minz	Bhabani S. Minz
3	1801219028	BIBEKANANDA MOHARANA	Bibekrananda Moharana	Bibekrananda Moharana	Bibekrananda Moharana	Bibekrananda Moharana
4	1801219040	CHANDRACHUDA MAJHI	Chandrachudamajhi	Chandrachudamajhi	Chandrachudamajhi	Chandrachudamajhi
5	1801219073	MAHIMA DANDASENA	Mahima Dandaseen	Mahima Dandaseen	Mahima Dandaseen	Mahima Dandaseen
6	1801219093	OMKARNATH KHILAR	Omkarnath Khilar	Omkarnath Khilar	Omkarnath Khilar	Omkarnath Khilar
7	1801219217	BISWANATH PRATAP JENA	Biswanath Pratap Jena	Biswanath Pratap Jena	Biswanath Pratap Jena	Biswanath Pratap Jena
8	1801219218	MANTU NAYAK	Mantu Nayak	Mantu Nayak	Mantu Nayak	Mantu Nayak
9	1801219219	NILESH CHAUDHARY	Nilesh Choudhary	Nilesh Choudhary	Nilesh Choudhary	Nilesh Choudhary
10	1801219220	PRAVATI NAVAK	Pravati Navak	Pravati Navak	Pravati Navak	Pravati Navak
11	1801219221	SANDEEP BARLA	Sandeepbarla	Sandeepbarla	Sandeepbarla	Sandeepbarla
12	1801219222	SATYABRATA PRADHAN	Satyabrata Pradhan	Satyabrata Pradhan	Satyabrata Pradhan	Satyabrata Pradhan
13	1801219223	SITAKANTA SAHOO	Sitakanta Sahoo	Sitakanta Sahoo	Sitakanta Sahoo	Sitakanta Sahoo
14	1801219224	SMRUTI RANJAN BISWAL	Smruti Ranjan Biswal	Smruti Ranjan Biswal	Smruti Ranjan Biswal	Smruti Ranjan Biswal
15	1801219225	SUSHMITA DALAI	Sushmita Dalai	Sushmita Dalai	Sushmita Dalai	Sushmita Dalai
Signature of the Course Coordinator						

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**COLLEGE OF ENGINEERING BHUBANESWAR (COEB)  
DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING**

ADD ON/ CERTIFICATE COURSE

**STUDENT ATTENDANCE**

Sheet No. 04

Programme: **B.Tech in Electrical and Electronics Engineering**

Semester: **7th**

Academic Year: **2021-22**

Name of the Course: **Concepts of transformer core design**

Course Code (if any):

Duration : 5.30 - 7.30 Pm

Date & Signature of the Student

Sl. NO.	Reg. No./ Enrollment No.	NAME OF THE STUDENT	Date: 22/12/21	Date: 23/12/21	Date: 24/12/21	Date: 06/01/22
1	1801219001	ABHISHEK	Abhishek	Abhishek	Abhishek	Abhishek
2	1801219025	BHABANI SHANKAR MINZ	Bhabani s. minz	Bhabani s. minz	abs	abs
3	1801219028	BIBEKANANDA MOHARANA	Bibekamanda Mohana	Bibekamanda Mohana	Bibekamanda Mohana	Bibekamanda Mohana
4	1801219040	CHANDRACHUDA MAJHI	Chandrachudamajhi	Chandrachudamajhi	Chandrachudamajhi	Chandrachudamajhi
5	1801219073	MAHIMA DANDASENA	Mahima Dandaseena	Mahima Dandaseena	Mahima Dandaseena	Mahima Dandaseena
6	1801219093	OMKARNATH KHILAR	Omkarnath khilar	Omkarnath khilar	Omkarnath khilar	Omkarnath khilar
7	1801219217	BISWANATH PRATAP JENA	Biswanath Pratap Jena	Biswanath Pratap Jena	Biswanath Pratap Jena	Biswanath Pratap Jena
8	1801219218	MANTU NAYAK	Manta Nayak	Manta Nayak	Manta Nayak	Manta Nayak
9	1801219219	NILESH CHAUDHARY	Nilesh Chaudhary	Nilesh Chaudhary	Nilesh Chaudhary	Nilesh Chaudhary
10	1801219220	PRAVATI NAYAK	Pravati Nayak	Pravati Nayak	Pravati Nayak	Pravati Nayak
11	1801219221	SANDEEP BARLA	Sandeep Barla	Sandeep Barla	Sandeep Barla	Sandeep Barla
12	1801219222	SATYABRATA PRADHAN	Satyabrata Pradhan	Satyabrata Pradhan	abs	Satyabrata Pradhan
13	1801219223	SITAKANTA SAHOO	Sitakanta Saha	Sitakanta Saha	Sitakanta Saha	Sitakanta Saha
14	1801219224	SMRUTI RANJAN BISWAL	Smruti Ranjan Biswal	Smruti Ranjan Biswal	Smruti Ranjan Biswal	Smruti Ranjan Biswal
15	1801219225	SUSHMITA DALAI	Sushmita Dalai	abs	Sushmita Dalai	Sushmita Dalai
Signature of the Course Coordinator						

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**COLLEGE OF ENGINEERING BHUBANESWAR (COEB)**  
**DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING**

ADD ON / CERTIFICATE COURSE

**STUDENT ATTENDANCE**

Sheet No. 05

Programme: **B.Tech in Electrical and Electronics Engineering**

Semester: **7th**

Academic Year: **2021-22**

Name of the Course: **Concepts of transformer core design**

Course Code (if any):

Duration: **(5.30 - 7.20) Pm**

Date & Signature of the Student

Sl. NO.	Reg. No./ Enrollment No.	NAME OF THE STUDENT	Date: 07/01/22	Date: 10/01/22	Date: 11/01/22	Date: 12/01/22
1	1801219001	ABHISHEK	Abhishek	Abhishek	Abhishek	Abhishek
2	1801219025	BHABANI SHANKAR MINZ	Bhabani S. minz	Prabeni S. minz	Prabeni S. minz	Prabeni S. minz
3	1801219028	BIBEKANANDA MOHARANA	Bibekanananda Moharana	Bibekanananda Moharana	Bibekanananda Moharana	Bibekanananda Moharana
4	1801219040	CHANDRACHUDA MAJHI	Chandrachudamajhi	Chandrachudamajhi	Chandrachudamajhi	Chandrachudamajhi
5	1801219073	MAHIMA DANDASENA	Mahima Dandaseen	Mahima Dandaseen	Mahima Dandaseen	Mahima Dandaseen
6	1801219093	OMKARNATH KHILAR	Omkarnath Khilar	Omkarnath Khilar	Omkarnath Khilar	Omkarnath Khilar
7	1801219217	BISWANATH PRATAP JENA	Biswanath Pratap Jena	Biswanath Pratap Jena	Biswanath Pratap Jena	Biswanath Pratap Jena
8	1801219218	MANTU NAYAK	Mantu Nayak	Mantu Nayak	Mantu Nayak	Mantu Nayak
9	1801219219	NILESH CHAUDHARY	Nilesh Chaudhary	Nilesh Chaudhary	Abi	Nilesh Chaudhary
10	1801219220	PRAVATI NAVAK	Pravati Navak	Pravati Navak	Pravati Navak	Pravati Navak
11	1801219221	SANDEEP BARLA	Sandeepbarla	Sandeepbarla	Sandeepbarla	Sandeepbarla
12	1801219222	SATYABRATA PRADHAN	Satyabrata Pradhan	Satyabrata Pradhan	Satyabrata Pradhan	Satyabrata Pradhan
13	1801219223	SITAKANTA SAHOO	Sitakanta Sahoo	Sitakanta Sahoo	Sitakanta Sahoo	Sitakanta Sahoo
14	1801219224	SMRUTI RANJAN BISWAL	Smruti Ranjan Biswal	Smruti Ranjan Biswal	Smruti Ranjan Biswal	Smruti Ranjan Biswal
15	1801219225	SUSHMITA DALAI	Sushmita Dalai	Sushmita Dalai	Sushmita Dalai	Sushmita Dalai
Signature of the Course Coordinator						

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**COLLEGE OF ENGINEERING BHUBANESWAR**  
PLOT NO-1(A), CNI COMPLEX, PATIA, BHUBANESWAR, KHORDHA, ODISHA-751024



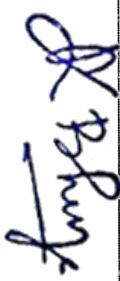
# *Certificate of Completion*

This is to certify that Mr./Ms. MAHIMA DANDASENA, student of the Department

of Electrical & Electronics Engg. semester Seventh bearing registration number 1801219073

has successfully completed the ADD-ON Course titled Concepts of Transforme Core Design

conducted at College of Engineering Bhubaneswar in the academic year 2021-22.

  
PRINCIPAL

College of Engineering Bhubaneswar

**XUE COPY**



Course-Coordinator



Principal



**COLLEGE OF ENGINEERING BHUBANESWAR**

PLOT NO-1(A), CNI COMPLEX, PATIA, BHUBANESWAR, KHORDHA, ODISHA-751024



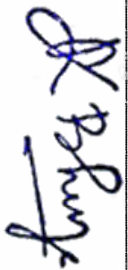
# Certificate of Completion

This is to certify that Mr./Ms. BISWANATH PRATAP JENA, student of the Department

of Electrical & Electronics Engg. semester Seventh bearing registration number 1801219217

has successfully completed the ADD-ON Course titled Concepts of Transforme Core Design

conducted at College of Engineering Bhubaneswar in the academic year 2021-22

  
PRINCIPAL

College of Engineering Bhubaneswar



Course-Coordinator



Principal

**TRUE COPY**



**COLLEGE OF ENGINEERING BHUBANESWAR**

PLOT NO-1(A), CNI COMPLEX, PATIA, BHUBANESWAR, KHORDHA, ODISHA-751024



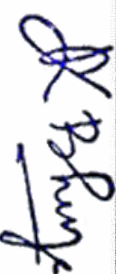
# Certificate of Completion

This is to certify that Mr./Ms. NILESH CHAUDHARY, student of the Department

of Electrical & Electronics Engg. semester Seventh bearing registration number 1801219219

has successfully completed the ADD-ON Course titled Concepts of Transforme Core Design

conducted at College of Engineering Bhubaneswar in the academic year 2021-22



**PRINCIPAL**  
College of Engineering Bhubaneswar

**TRUE COPY**



Course-Coordinator



Principal



**COLLEGE OF ENGINEERING BHUBANESWAR**

PLOT NO-1(A), CNI COMPLEX, PATIA, BHUBANESWAR, KHORDHA, ODISHA-751024



# *Certificate of Completion*

This is to certify that Mr./Ms. PRAVATINAYAK, student of the Department

of Electrical & Electronics Engg. semester Seventh bearing registration number 1801219220

has successfully completed the ADD-ON Course titled Concepts of Transforme Core Design

conducted at College of Engineering Bhubaneswar in the academic year 2021-22.

**TRUE COPY**

Course-Coordinator

Principal

**PRINCIPAL**  
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 PLOT NO-1(A), CNI COMPLEX, PATIA, BHUBANESWAR, KHORDHA, ODISHA-751024



# Certificate of Completion

This is to certify that Mr./Ms. SANDEEP BARLA, student of the Department

of Electrical & Electronics Engg. semester Seventh bearing registration number 1801219221

has successfully completed the ADD-ON Course titled Concepts of Transforme Core Design

conducted at College of Engineering Bhubaneswar in the academic year 2021-22.

*[Signature]*

PRINCIPAL  
 College of Engineering Bhubaneswar

TRUE COPY

*[Signature]*

Course-Coordinator

*[Signature]*

Principal