VIDHYADEEP UNIVERSITY
Holy Flame of Knowledge

THIRD-YEAR DIPLOMA ELECTRICAL ENGINEERING SYLLABUS

Semester: 5th

Course Code Lab: 002203576 **Type of Course:** PEC-LC-2

Course Name: ELECTRICAL TRACTION AND CONTROL-PRACTICAL

Course Prerequisites: N.A

COURSE OBJECTIVE(S): The aim of this course is to help the student to attain the following industry identified competency through various teaching learning experiences:

- Maintain electric traction systems**.**

TEACHING & EXAMINATION SCHEME:-

Teaching Scheme (Hrs/Week)				Examination Scheme					
Theory	Tutorial	Practical	Credit	SEE		CA			Total
				Th	Pr	MSE	PLE	LA	
0	0	2	1	0	25	0	0	25	50

SEE: Semester End Examination; CA: Continuous Assessment; Th: Theory; Pr: Practical; MSE: Mid Semester Examination; PLE: Participatory Learning Experience; LA: Laboratory Assessment

*TOTAL Practical Hours: No. of Pr. and Prt.Hrs/Week*15 = 30*

LIST OF PRACTICALS: *(sample for 2 hrs/week)*15 weeks*

Sr. No.	Content	Unit No.	Time Duration
1	Dismantle a traction motor	1	2
2	Assemble a traction motor	1	2
3	Troubleshoot a traction motor	1	2
4	Visit electric-traction train lighting system installation, identify components of system and prepare report.	2	2
5	Visit electric-traction loco shed, investigate working of each section & prepare report	2	2
6	Visit to Traction Substation or feeding post (for layout and OHE) and write a report.	6	2
7	Visit to Railway Station (for signalling and train lighting) and writing a report on visit	4	2
8	Draw traction substation Layout on drawing sheet and prepare report	3	2
9	Draw Pentagonal OHE Catenary, different Catenaries according to speed limit, OHE supporting structure on drawing sheet and prepare report.	4	2
10	Draw Power Circuit of AC Locomotive on drawing sheet and prepare report.	3	2
11	Draw sketch of overhead current collecting equipment.	6	2
12	Describe the train lighting system	6	2
13	Investigate various latest trends in electrical traction system.	5	2
14	Understand the working of high speed train	5	2
15	Solve numerical on speed time curves.	1	2
		TOTAL	30

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Text Book(s):

Title of the Book	Author(s)	Publication
Electric Traction and control	P.M Sony, P.A Upadhyay	AtulPrakashan. 2023
Electric Traction	R.P Ajawaliya	AtulPrakashan. 2022

Reference Book(s):

Title of the Book	Author(s)	Publication
Modern Electric Traction	Partab H.	DhanpatRai and Co
Utilization of Electric power and traction	Gupta J.B.	S.K.Kataria and Son

- https://www.electricaltechnology.org/
- https://www.vlab.co.in/

Equivalent/Corresponding Course on NPTEL (SWAYAM):

PRACTICAL EVALUATION:

Sr. No.	Activity	Marks	Weightage
1	Semester End Examination (External Practical)	25	60%
2	Continuous Assessment Practical (CAP)	25	40%
	Semester End Examination (External Practical)		
1(a)	Lab Experiment/Exercise	15	30%
1(b)	Viva-voce	10	20%
1(c)	Certified Record	05	10%
	Continuous Assessment Practical (CAP)		
2(a)	Day to day Laboratory Work & Attendance	10	20%
2(b)	Submission of Laboratory Work/Journal	05	10%
2(c)	Exam	05	10%

* For 4 Credit Subjects

1 Credit = 25 Marks
Theory: 3 Credits = 75 Marks
Practicals: 1 Credit = 25 Marks
SEE Evaluation will be of 100 marks and converted to 50 Marks (75 Th + 25 Pr)
CA Evaluation will be of 100 Marks and converted to 50 Marks. (75 Th + 25 Pr)

Distribution of Marks for Theory Evaluation as per Bloom's Taxonomy Level:-

Level	Remember	Understand	Apply	Analyze	Evaluate	Create
% Weightage	20%	10%	20%	10%	20%	20%

COURSE OUTCOMES:

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CO1	Interpret the traction layout and its systems
CO2	Maintain the power supply arrangements.
CO3	Maintain the function of the overhead equipment for electric traction
CO4	Maintain the different components of the electric locomotive.
CO5	Maintain the traction motor and train lighting system
CO6	Maintain the signaling and supervisory control systems.