



HYPEX Technology Pvt. Ltd.

Why Training with HYPEX Technology :

Expansion of technical institutions has certain disadvantages and one of them is besides having good academic knowledge students lack in practical and professional skills. We HYPEX Technology Private Limited help students to be practically and professionally sound and also motivate them to be frank and used to towards solving real life problems. We are trying to bridge the gap between academic and professional career growth. Our expert, experienced professionals are well versed in their respective domain. We are a team dedicated to give our best to shape the future of students.

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* T&C Application

STATE BOARD OF TECHNICAL EDUCATION, BIHAR

Scheme of Teaching and Examinations for

V SEMESTER DIPLOMA IN ELECTRICAL ENGINEERING/ ELECTRICAL & ELECTRONICS ENGINEERING.

(Effective from Session 2016-17 Batch)

THEORY

Sr. No.	SUBJECT	SUBJECT CODE	TEACHING SCHEME	EXAMINATION-SCHEME							
				Periods per Week	Hours of Exam.	Teacher's Assessment (TA) Marks A	Class Test (CT) Marks B	End Semester Exam.(ESE) Marks C	Total Marks (A+B+C)	Pass Marks ESE	Pass Marks in the Subject
1.	Switchgear and Protection	1620501	04	03	10	20	70	100	28	40	04
2.	A.C. Machines	1620502	04	03	10	20	70	100	28	40	04
3.	Utilization of Electrical Energy	1620503	04	03	10	20	70	100	28	40	04
4.	Electric Traction-I	1620504	03	03	10	20	70	100	28	40	03
5.	Industrial Automation	1620505	03	03	10	20	70	100	28	40	03
Total :-			18				350	500			

PRACTICAL

Sr. No.	SUBJECT	SUBJECT CODE	TEACHING SCHEME	EXAMINATION-SCHEME						
				Periods per Week	Hours of Exam.	Practical (ESE)		Total Marks (A+B)	Pass Marks in the Subject	Credits
						Internal(A)	External(B)			
6.	Switchgear and Protection Lab	1620506	02	03	15	35	50	20	01	
7.	A.C. Machines Lab	1620507	02	03	15	35	50	20	01	
8.	Electric Traction Lab-I	1620508	02	03	15	35	50	20	01	
9.	Industrial Automation Lab	1620509	02	03	15	35	50	20	01	
Total :-			08				200			

TERM WORK

Sr. No.	SUBJECT	SUBJECT CODE	TEACHING SCHEME	EXAMINATION-SCHEME					
				Periods per Week	Marks of Internal Examiner (X)	Marks of External Examiner (Y)	Total Marks (X+Y)	Pass Marks in the Subject	Credits
10.	Industrial Project & Entrepreneurship Development (TW)	1620510	04	07	18	25	10	01	
11.	Professional Practices-V (TW)	1620511	03	07	18	25	10	01	
Total :-			07			50		24	
Total Periods per week Each of duration One Hour				33	Total Marks = 750				

INDUSTRIAL PROJECT AND ENTREPRENEURSHIP DEVELOPMENT-TW (ELECTRICAL ENGINEERING GROUP)

Subject Code 1620510	Term Work						Credits 01
	No. of Periods Per Week			Full Marks			
	L	T	P/S	Internal	:	25	
	—	—	04	External	:	07	
						18	

CONTENTS : TERM WORK

PART A) Industrial Project

Following activities related to project are required to be dealt with, during this semester

1. Form project batches & allot project guide to each batch. (Max. 4 students per batch)
2. Each project batch should select topic / problem / work by consulting the guide & / or industry. Topic/ Problem / work should be approved by Head of department.
3. Each project batch should prepare action plan of project activities & submit the same to respective guide.
4. At the end of semester, each project batch should submit the action plan and abstract of the project along with list of materials required if project involves fabrication or other facilities required in other kinds of project.
5. Action Plan should be part of the project report. Actual work of project should be done in sixth semester.

Group	Projects
01	<ol style="list-style-type: none">(1) Design of Illumination Scheme (Up to 20 KW) for Hospital / Shopping Mall / Cinema Theatre / Commercial Complex / Educational Institute / Industrial Complex.(2) Design of Rural Electrification Scheme for small Village, Colony.(3) Case Studies Related to Industries – Operation / Maintenance / Repair and Fault Finding. (Refer Guideline Document).(4) Energy Conservation and Audit.(5) Substation Model (Scaled)(6) Wind Turbine Model (Scaled)
02	<ol style="list-style-type: none">(1) Rewinding of Three Phase/Single Phase Induction Motor.(2) Rewinding of Single Phase Transformer.(3) Fabrication of Inverter up to 1000 VA.(4) Fabrication of Battery Charger.(5) Fabrication of Small Wind Energy System for Battery Charging.(6) Fabrication of Solar Panel System for Battery Charging.(7) Microprocessor/ Micro controller Based Projects.(8) PC Based Projects.(9) Simulation Projects.
03	Seminar on any relevant latest technical topic based on latest research, recent trends, new methods and developments in the field of Electrical Engineering / Power Electronics.

Part B: Entrepreneurship

Objectives: Students will be able to

- 1) Identify entrepreneurship opportunity.
- 2) Acquire entrepreneurial values and attitude.
- 3) Use the information to prepare project report for business venture.
- 4) Develop awareness about enterprise management.

Chapter	Name of the Topic	Hours
Unit-01	<p>Entrepreneurship, Creativity & Opportunities</p> <p>1) Concept, Classification & Characteristics of Entrepreneur</p> <p>2) Creativity and Risk taking. 1.2.1) Concept of Creativity & Qualities of Creative person. 1.2.2) Risk Situation, Types of risk & risk takers.</p> <p>3) Business Reforms. 1.3.1) Process of Liberalization. 1.3.2) Reform Policies. 3) Impact of Liberalization. 4) Emerging high growth areas.</p> <p>1.4) Business Idea Methods and techniques to generate business idea. 1.5) Transforming Ideas into opportunities transformation involves Assessment of idea & Feasibility of opportunity 1.6) SWOT Analysis</p>	03
Unit-02	<p>Information And Support Systems</p> <p>1) Information Needed and Their Sources: Information related to project, Information related to support system, Information related to procedures and formalities</p> <p>2) Support Systems 1) Small Scale Business Planning, Requirements. 2) Govt. & Institutional Agencies, Formalities 3) Statutory Requirements and Agencies.</p>	02
Unit-03	<p>Market Assessment</p> <p>1) Marketing - Concept and Importance 2) Market Identification, Survey Key components 3.3) Market Assessment</p>	02
Unit-04	<p>Business Finance & Accounts Business Finance 4.1) Cost of Project</p> <p>1) Sources of Finance 2) Assessment of working capital 3) Product costing 4) Profitability 5) Break Even Analysis 6) Financial Ratios and Significance Business Account</p> <p>2) Accounting Principles, Methodology 1) Book Keeping 2) Financial Statements 3) Concept of Audit</p>	03
Unit-05	<p>Business Plan & Project Report</p> <p>1) Business plan steps involved from concept to commissioning Activity Recourses, Time, Cost</p> <p>2) Project Report 1) Meaning and Importance 2) Components of project report/profile (Give list) 5.3) Project Appraisal 1) Meaning and definition 2) Technical, Economic feasibility 3) Cost benefit Analysis</p>	03

Unit-06	Enterprise Management And Modern Trends 6.1) Enterprise Management: 1)Essential roles of Entrepreneur in managing enterprise 2)Product Cycle: Concept and importance 3)Probable Causes Of Sickness 4)Quality Assurance: Importance of Quality, Importance of testing 6.2) E-Commerce: Concept and Process 3) Global Entrepreneur 1. Assess yourself-are you an entrepreneur? 2. Prepare project report and study its feasibility.	03
	Total	16

Text /Reference Books:		
Titles of the Book	Name of Authors	Name of the Publisher
Entrepreneurship Theory and Practice TTTI, Bhopal / Chandigadh	J.S. Saini B.S.Rathore --	Wheeler Publisher --
Entrepreneurship Development	E. Gorden K.Natrajan	Himalaya Publishing.
Entrepreneurship Development	Prepared by Colombo planstaff college for Technician Education.	Tata Mc Graw Hill Publishing co. ltd. New Delhi.
A Manual on How to Prepare a Project Report	J.B.Patel D.G.Allampally	EDI STUDY MATERIAL Ahmadabad (Near Village Bhat , Via Ahmadabad Airport & Indira Bridge), P.O. Bhat 382428 , Gujrat, India P.H. (079) 3969163, 3969153 E-mail : ediindia@sancharnet.in / olpe@ediindia.org Website : http://www.ediindia.org
A Manual on Business Opportunity Identification & Selection	J.B.Patel S.S.Modi	
National Directory of Entrepreneur Motivator & Resource Persons.	S.B.Sareen H. Anil Kumar	
New Initiatives in Entrepreneurship Education & Training	Gautam Jain Debmuni Gupta	
A Handbook of New Entrepreneurs	P.C.Jain	

2) Video Cassettes:

No	Subject	Source
1	FivesuccessStoriesofFirstGeneration Entrepreneurs	EDI STUDY MATERIAL Ahmadabad (Near Village Bhat , Via Ahmadabad Airport & Indira Bridge), P.O. Bhat 382428 , Gujrat, India P.H. (079) 3969163, 3969153 E-mail : ediindia@sancharnet.in / olpe@ediindia.org Website : http://www.ediindia.org
2	Assessing Entrepreneurial Competencies	
3	Business Opportunity Selection and Guidance	
4	Planning for completion & Growth	
5	Problem solving-An Entrepreneur skill	

Glossary: Industrial Terms

Terms related to finance, materials, purchase, sales and taxes. Components of Project Report:

1. Project Summary (One page summary of entire project)

2. Introduction (Promoters, Market Scope/ requirement)

3. Project Concept & Product (Details of product)

4. Promoters (Details of all Promoters- Qualifications, Experience, Financial strength)

5. Manufacturing Process & Technology

6. Plant & Machinery Required

7. Location & Infrastructure required

8. Manpower (Skilled, unskilled)

9. Raw materials, Consumables & Utilities

10. Working Capital Requirement (Assumptions, requirements)

11. Market (Survey, Demand & Supply)

12. Cost of Project, Source of Finance

13. Projected Profitability & Break Even Analysis

14. Conclusion.

PROFESSIONAL PRACTICES – V - TW

(ELECTRICAL ENGINEERING GROUP)

Subject Code 1620511	Term Work				Credits 01	
	No. of Periods Per Week			Full Marks		: 25
	L	T	P/S	Internal		: 07
	—	—	03	External		: 18

CONTENTS: TERM WORK

	Activity	Hours
Unit-1	<p>Industrial Visits Structured industrial visits be arranged and report of the same should be submitted by the individual student, to form a part of the term work. Following are the suggested type of Industries/ Fields -</p> <ul style="list-style-type: none"> i) Visit to Electrical Machine Manufacturing Industry. ii) Visit to a Foundry to see Furnaces and Ovens. iii) Visit to L & T LT Switchgear Laboratory at Pune. iv) Visit to Railway Station to study operation of Signaling system. v) Visit to Loco shed or EMW at Nasik. vi) Visit to Large Industry to study Protection Schemes. vii) Any Industry having Automation for manufacturing Processes. 	16
Unit-2	<p>The Guest Lecture/s from field/industry experts, professionals to be arranged minimum 3 Lectures each of two hours from the following or alike topics. The brief report to be submitted on the guest lecture by each student as a part of Term work</p> <ul style="list-style-type: none"> a) Modern trends in A. C. Machines b) Bio Medical Instruments: Working, Calibration etc c) Testing of Switchgears d) Computer aided drafting. e) Automotive wiring & lighting. f) Environmental pollution & control. g) Interview Techniques. h) Automobile pollution, norms of pollution control. 	10
Unit-3	<p>Information Search (Student seminars based on information search & guest lecture topics.)</p> <ul style="list-style-type: none"> a) Magnetic Levitation Systems b) Recent developments in use of Electrically operated vehicles for mass transport c) Metro Railway in Kolkata and Delhi comparative study d) Electrically operated Motor Cars and Scooters/Motorbikes e) Alternative fuels & energy options. f) Any other topic 	06
Unit-4	<p>Group Discussion :</p> <p>The students should discuss in group of six to eight students and write a brief report on the same as a part of term work. The topic of group discussions may be selected by the faculty members. Some of the suggested topics are -</p> <ul style="list-style-type: none"> i) CNG versus LPG as fuel. ii) Load shedding and remedial measures. iii) Rain water harvesting. iv) Trends in energy conservation v) Disaster management. vi) Use of Plastic Carry Bags vii) Safety in day to day life. viii) Energy Saving in Institute. 	06

Unit-5	Seminar : Seminar topic should be related to the subjects of fifth semester / topics from information search & guest lectures. Each student shall submit a report of at least 10 pages and deliver a seminar (Presentation time – 10 minutes)	10
	Total	48