

# **Bachelor of Vocational Studies (B.Voc.) in Industrial Management**

**Veer Narmada South Gujarat University (VNSGU)**

## **Semester I & Semester II**

### **Detailed Syllabus Prepared by**

BBA Adhoc Board

Chairman – Dr. Jaydip C. Chaudhari

### **Committee Members**

Dr. Daisy Sheby Thekkanal

Dr. Swati Mehta

Dr. Aditi Bhatt

## Framework of B.Voc. in Industrial Management Semester I & Semester II

### Semester 1

Section	Subject Name	Credit	Hours
Discipline Specific Core Courses	Occupational Safety & Health	3	45
	General Production Processes - I	3	45
Discipline Specific Electives	Principles of Management	2	30
Multi-Disciplinary Courses	N/A		
Ability Enhancement Courses	Functional English - I	2	30
Skill Enhancement Courses	Computer Skills - I	1	15
Value Addition Courses	Business Soft Skills	1	15
RP/OJT		18	540
<b>Total Credits / Hours</b>		<b>30</b>	<b>720</b>

### Semester 2

Section	Subject Name	Credit	Hours
Discipline Specific Core Courses	General Production Processes - II	3	45
Discipline Specific Electives	Organizational Behaviour	2	30
Multi-Disciplinary Courses	Business Economics	2	30
Ability Enhancement Courses	Communication Skills - I	2	30
Skill Enhancement Courses	Computer Skills - II	1	15
Value Addition Courses	Environmental Regulation	2	30
RP/OJT		18	540
<b>Total Credits / Hours</b>		<b>30</b>	<b>720</b>

## **B.Voc. in Industrial Management Semester – I**

### **Functional English – I**

Course	B.Voc. in Industrial Management (Sem – I)
Course Title	Functional English – I
Credit	02
Teaching per Week	02
Minimum weeks / Semester	30 Hours
Medium of Instruction	English
Course Objective	<ol style="list-style-type: none"><li>1. The student must be taught the art of business correspondence.</li><li>2. To develop written and oral communication skills among students</li></ol>
Course Outcome	<ol style="list-style-type: none"><li>1. The students would refresh the basics of English communication and learn various formats of business correspondence.</li></ol>

### **Course Content**

#### **Unit 1. Basic English Grammar**

- Tenses; Conjunctions – Usage of (although, though, even though, in spite of, despite, as well as, in case, unless, as long as, as if, for)
- Prepositions; Voices (Active and Passive)
- Speeches (Direct and Indirect)
- Punctuations
- Degree of Comparisons
- Adjective Clauses and Noun Clause

#### **Unit 2. Vocabulary**

- Use of Dictionary (Antonyms & Synonyms)
- Roots
- Prefix
- Suffix
- Words Often Confused
- One Word Substitute
- Word Building
- Phrasal Verbs
- Idioms
- Simile
- Homonyms
- Homophones

#### **Unit 3. Understanding Communication (Theory)**

- Definition
- Process
- Importance
- Types of Communication
- Characteristics
- 7 Cs of Effective Communication
- Barriers to Effective Communication
- Overcoming Barriers

## **B.Voc. in Industrial Management Semester – I**

### **Unit 4. Correspondence (Application Based)**

- Format - Business Letter
- Quotations
- Tenders
- Placing Business Order
- Project Report

### **References:**

1. Rajendra Pal and J. S. Korlahalli 2004 Essentials of Business Communication. Sultan Chand & Sons
2. Asha Kaul 2007. Business Communication PHI Publication
3. Sanjay Kumar & Pushp Lata 2015 Communication Skills Oxford University Press

## **B.Voc. in Industrial Management Semester – I**

### **Business Soft Skills**

Course	B.Voc. in Industrial Management (Sem – I)
Course Title	Business Soft Skills
Credit	01
Teaching per Week	01
Minimum weeks / Semester	15 Hours
Medium of Instruction	English
Course Objective	<ol style="list-style-type: none"><li>1. To prepare the students as future entrepreneurs.</li><li>2. To develop among the students soft skills necessary to be employment ready.</li></ol>
Course Outcome	<ol style="list-style-type: none"><li>1. The students would understand the importance of being goal oriented, having a positive attitude and the importance of time and how to manage it properly.</li></ol>

### **Course Content**

#### **Unit 1. Goal Setting**

- Importance of Goal Setting
- SMART Goals
- Types of Goals
- Benefits of Goals
- How to set Goals

#### **Unit 2. Positive Attitude**

- Define positive attitude
- Technique of Visualization
- Technique of Affirmation

#### **Unit 3. Time Management**

- Objectives and significance of Time Management
- Steps of Effective Time Management
- Procrastination and ways to overcome

#### **Unit 4. Leadership**

- Understanding Leadership and its Importance
- Traits and Models of Leadership
- Basic Leadership Skills (Motivation, Teamwork, Negotiation, Networking)

#### **References:**

1. Ashokan M.S. 2015 Karmayogi: A Biography of E. Sreedharan. London, UK: Penguin
2. Kalam, A.P.J. 2003 Ignited Minds: Unleashing the Power within India. New Delhi: Penguin Books India
3. Norman Vincent Peale 2016 The Power of Positive Thinking Grapevine India Publishers

## **B.Voc. in Industrial Management Semester – I**

### **Computing Skills - I**

Course	B.Voc. in Industrial Management (Sem – I)
Course Title	Computing Skills – I
Credit	01
Teaching per Week	01
Minimum weeks / Semester	15 Hours
Medium of Instruction	English
Course Objective	<ol style="list-style-type: none"><li>1. To familiarize the students with electronic business</li><li>2. To acquaint the students with the infrastructure of e- business</li></ol>
Course Outcome	<ol style="list-style-type: none"><li>1. The students would understand the importance of computing skills, the role of computer knowledge in every span of business.</li></ol>

### **Course Content**

#### **Unit 1. Introduction to Computers & Operating Systems**

- Introduction
- Characteristics
- Computer Architecture
- Devices (Input, Output, Storage)
- Use of Computers in Business
- Functions of Operating Systems
- Types of OS
- Examples of OS

#### **Unit 2. Word Processing**

- Creating
- Navigating
- editing word document
- Page Setup and Page Background
- Working with table
- inserting smart art and shapes
- Page breaks
- Section breaks
- Headers and Footers
- Watermark
- Hyperlink and bookmark
- Table of Content
- Footnotes
- Citations and Bibliography

#### **Unit 3. Working with Excel**

- Workbook
- Worksheet
- Workspace

## **B.Voc. in Industrial Management Semester – I**

- formatting workbook
- conditional formatting
- working with charts
- Data validation
- Sorting Data
- Pivot Tables
- Mathematical
- Statistical
- Counting
- Date and Time
- Total and Subtotal function

### **Unit 4. Presentation Package**

- Creating
- browsing and saving presentations
- using slide layout
- adding notes to slides
- Use of AI to make presentation

### **References:**

1. Ritender Goel Computer Application in Management
2. P. Mohan Fundamentals of Computer
3. R. K. Taxali PC Software for Windows
4. Ashok Arora & Sefali Bansal Computer Fundamentals

## **B.Voc. in Industrial Management Semester – I**

### **Principles of Management**

Course	B.Voc. in Industrial Management (Semester – I)
Course	Major in Industrial Management
Course Title	Principles of Management
Credit	02
Teaching per Week	02
Minimum weeks / Semester	30 Hours
Medium of Instruction	English
Course Objective	1. The management functions must be known 2. The managerial skills must be developed among the students
Course Outcome	1. The evolution of management would be known to the students 2. The role of management functions in business.

#### **Course Content**

##### **Unit 1. Introduction to Management**

- Definition of Management
- Evolution of management thought
- functions of management

##### **Unit 2. Planning & Organizing**

- Definition
- Process and Types of plans
- Organizational Structure and design
- Authority and Responsibility
- Delegation and decentralization

##### **Unit 3. Entrepreneurship and Innovation**

- Entrepreneurial mindset
- Innovation Management

##### **Unit 4. Emerging Trends in Management**

- Technology and Digital transformation
- Sustainability and Green Management

##### **References:**

1. Management: Challenges for Tomorrow's Leaders by Pamela S. Lewis, Stephen H. Goodman and Patricia M. Fandt; South Western College Pub., 6<sup>th</sup> Edition, 2020
2. Strategic Management; Concepts and Cases by Fred R. David and Forest R. David; Pearson, 16<sup>th</sup> Edition 2019
3. Organization Theory & Design by Richard L. Daft; Cengage Learning; 13<sup>th</sup> Edition, 2018
4. Innovation and Entrepreneurship by Peter F. Drucker; Publisher: Harper Collins, Revised Edition 2014



**B.Voc. in Industrial Management  
Semester – I**

5. The Future of Management by Gary Hamel; Harvard Business Review Press, Updated Edition, 20017
6. Management: Principles & Practices by S. K. Mandal; Everest Publishing House, 1<sup>st</sup> Edition 2018
7. Principles of Management by P. C. Tripathi and P. N. Reddy; Tata McGraw-Hill Education, 7<sup>th</sup> Edition, 2018
8. Principles and Practices of Management by L. M. Prasad; Sultan Chand & Sons, 4<sup>th</sup> Edition, 2015

## **B.Voc. in Industrial Management Semester – I**

### **Occupational Safety and Health**

Course	B.Voc. in Industrial Management (Semester – I)
Course	Major in Industrial Management
Course Title	Occupational Safety and Health
Credit	03
Teaching per Week	03
Minimum weeks / Semester	45 Hours
Medium of Instruction	English
Course Objective	<ol style="list-style-type: none"><li>1. The students must be aware of the safety and health standards and practices.</li><li>2. The guidelines must be followed in respective industry</li></ol>
Course Outcome	<ol style="list-style-type: none"><li>1. The students will be prepared to handle any sort of occupational hazards and would learn to adopt preventive measures in the respective industry</li></ol>

### **Course Content**

#### **Unit 1. Introduction to OSH in manufacturing**

- Definition and Context of OSH
- Objectives and Principles
- Workplace and Health
- Occupational Health
- Hygiene and Ergonomics

#### **Unit 2. Hazard Identification, Evaluation and Control**

- What is an accident?
- Accident Analysis, Monitoring of Hazards, Reporting and Investigation of Accidents
- Safety through Design, Building and Facility Layout, Construction of Facilities and Maintenance of Facilities
- Boilers, Electrical Safety and Personal Protective Equipment, Fire Protection, Flammable and Combustible Material
- Fall Hazards; Material Handling and Storage, Hoisting and Conveying Equipment

#### **Unit 3. Emergency Preparedness and Response**

- Overview of existing OSH Legislations in India
- The Factories Act, The Mines Act, The Workmen's Compensation Act
- The Employee's State Insurance Act, Health Screening Measures, Occupational History
- Process Safety Management, Hand and Portable Tools

#### **Unit 4. Industrial Safety**

- Leading and Lagging Indicators
- Safety Metrics, Safety Statues

## **B.Voc. in Industrial Management Semester – I**

### **References:**

1. Hazard Prevention, Hazard Identification & Risk Assessment (HIRA)Dr. K.U. Mistry 2022  
Fundamentals of Industrial Safety and Health Siddarth
2. Benjamin O ALLI 2008 Fundamental Principles of Occupational Health and Safety, ILO, Geneva
3. Raja Sekhar Mamillapalli, Visweswara Rao Occupational Health and Hygiene in Industries
4. BSP Books

## **B.Voc. in Industrial Management Semester – I**

### **General Production Processes - I**

Course	B.Voc. in Industrial Management (Semester – I)
Course Title	General Production Processes – I
Credit	03
Teaching per Week	03
Minimum weeks / Semester	45 Hours
Medium of Instruction	English
Course Objective	1. To explain the basics of Operations and Manufacturing Processes, Techniques of Production, Material Handling Systems, Plant Layout and Inventory Control
Course Outcome	1. The students will understand the basics of various production processes and other activities related to the production function.

### **Course Content**

#### **Unit 1. Manufacturing Process**

- Goods Manufacturing Practices (GMP)
- Goods Laboratory Practice (GLP)
- Equipment to be used in Manufacturing, Computer Aided Manufacturing (CAM),
- Line Balancing, Material Balance, Use of technology in manufacturing – Programmable Logic Control (PLC) and Distributed Control System (DCS)
- People Management and Group Dynamics

#### **Unit 2. Material Handling**

- Plant Layout : Definition, Factors affecting choice of layout Types of Layouts, Principles of a good plant layout
- Material Handling : Concept, Definitions, Types of Material Handling Equipments, Principles of Material Handling

#### **Unit 3. Production Lines and Assembly Processes**

- Definition of Production, Production Management, Operations, Operations Management
- Different Types of Production Systems – Continuous, Intermittent and their sub types with merits and demerits.

#### **Unit 4. Operation Management**

- Introduction to Operations functions like Human Resource, Finance, Sales and Marketing, Research and Development, Engineering and Utility etc.,
- Value Engineering, Make or Buy Decision, Process technology: project, job shop, batch, assembly line, continuous manufacturing, process technology life cycle.

## B.Voc. in Industrial Management Semester – I

### References:

1. P.N. Rao Manufacturing Technology (Foundation Forming & Welding) Tata McGraw Hill
2. J. S. Campbell Principles of Manufacturing materials and processes Tata Mc Graw Hill
3. D. Mishra Basic Manufacturing Process India Tech Publisher, New Delhi 4.
4. J.L. Riggs, Production Systems : Planning analysis and control John Wiley 5.
5. R. Panneerselvam Production and Operations Management PHI.

<b>Vocational Training</b>	<b>Hours</b>	<b>Credit</b>
<b>Training in OSH Department</b> - Understanding Occupational Safety and Health SOP and guidelines with respect to respective industry and also having hands on experience for the same.	540	18
<b>Training in Production Department</b> – Understanding Manufacturing processes, material handling and production line and assembly processes and also having hands on experience for the same.		

## **B.Voc. in Industrial Management Semester – II**

### **Computer Skill – II**

Course	B.Voc. in Industrial Management (Sem – II)
Course Title	Computing Skill – II
Credit	01
Teaching per Week	01
Minimum weeks / Semester	15 Hours
Medium of Instruction	English
Course Objective	<ol style="list-style-type: none"><li>1. To familiarize the students with electronic business.</li><li>2. To acquaint the students with the infrastructure of e-business</li></ol>
Course Outcome	<ol style="list-style-type: none"><li>1. The students would understand the importance of computing skills, the role of computer knowledge in every span of business.</li><li>2. Demonstrate proficiency and understanding of social networks for business and professional use</li></ol>

### **Course Content**

#### **Unit 1. PowerPoint Presentation**

- Introduction to MS PowerPoint, Creating, Editing, Viewing, Saving presentation
- Creating new slides, using design template, Slide layouts, Inserting new slide between two slides, Inserting textbox, Deleting textbox, Deleting slide, Hiding slide, Reordering slides
- Use of color scheme, Background images, Formatting text, Applying bullets and numbering, Slide transition, Animation scheme, Working with slide master.

#### **Unit 2. Introduction To Internet**

- History of Internet, Internet services, Intranet, Internet Vs Intranet, Governance on Internet
- Internet Technology and Protocol. Use of Internet. Internet Tools and Multimedia
- World Wide Web, URL Concepts. Web browsers, Search engine, search criteria

#### **Unit 3. E-mail, Social Networking And E\_Governance**

- E-mail – concepts, structure, protocols, addresses, security & hackings
- Social Networking - Types of Social Networking Content, Types of social networks (e.g., Twitter, Facebook), brief idea about Techniques to study different aspects of OSNs – Follower-followee dynamics, link farming, spam detection, hashtag popularity and prediction, linguistic styles of tweets
- E\_governance : Needs of E-Governance, Issues in E-Governance applications , Evolution of E-Governance., components of e-Governance., Role of social Media in e-Governance

#### **References:**

1. Working With Personal Computer Software by R.P.Soni, Harshal Arolkar, Sonal Jain, Wiley India.
2. Computer Application, by Vimal Pandya & Dr. G. N. Jani, Akshar Publication.
3. Computer Application – II, by Vimal Pandya, HK Arts College Publication.
4. Internet Technology and Web Design, ISRD Group, TMH Publication
5. Internet the Complete Reference, by Young.
6. Internet for Every One Techworld, by Leon.
7. Robert Hanneman and Mark Riddle. Introduction to social network methods. Online Text Book,

## **B.Voc. in Industrial Management Semester – I**

2005.

8. C.S.R.Prabhu : E-Governance: Concepts and Case Studies, Prentice Hall of India Pvt. Limited (2004)
9. R. K. Taxali PC Software for Windows

## B.Voc. in Industrial Management Semester – II

### Communication Skills I

Course	B.Voc. in Industrial Management (Sem – II)
Course Title	Communication Skills
Credit	02
Teaching per Week	02
Minimum weeks / Semester	30 Hours
Medium of Instruction	English
Course Objective	<ol style="list-style-type: none"> <li>1. To prepare the students as future entrepreneurs.</li> <li>2. To develop among the students communication skills necessary to be employment ready.</li> <li>3. Enhance the communication skills required in different business contexts through various interactive activities</li> </ol>
Course Outcome	<ol style="list-style-type: none"> <li>1. Be able to explain the major concepts of interpersonal communication in order to develop communication competence in relationships</li> <li>2. Be able to apply interpersonal communication theories to real life experiences.</li> <li>3. Be able to evaluate communication transactions (face-to-face and technology-mediated) according to established criteria.</li> </ol>

### Course Content

#### **Unit 1. Active Listening**

- Introduction, definition of listening, listening Vs hearing, process of listening
- problems students face in listening, sub-skills of listening, what is good listening?
- strategies of listening, barriers to listening, listening in the workplace, activities that help you to become better listeners.

#### **Unit 2. Effective Speaking**

- Spoken skills Conducting Presentation, Oral presentation, Debates, Speeches, Interview, Group Discussion, English Pronunciation, Building Vocabulary.

#### **Unit 3. Non-Verbal Communication**

- Personal Appearance , Gestures , Postures , Facial Expression , Eye Contacts
- Body Language(Kinesics) , Time language , Silence , Tips for Improving Non-Verbal Communication

#### **Unit 4. Interpersonal Communication**

- Dyadic Communication & self-perception, Different types of Interviews, Kinds of Meetings
- Solving problems in meetings and groups, Planning the meeting
- Procedures during meeting, Participant responsibilities in meetings



## **B.Voc. in Industrial Management Semester – II**

### **References:**

1. Basic communication skills for Technology, Andreja. J. Ruther Ford, 2nd Edition, Pearson Education, 2011
2. Communication skills, Sanjay Kumar, Pushpalata, 1<sup>st</sup> Edition, Oxford Press, 2011
3. Organizational Behaviour, Stephen .P. Robbins, 1<sup>st</sup> Edition, Pearson, 2013
4. Brilliant- Communication skills, Gill Hasson, 1<sup>st</sup> Edition, Pearson Life, 2011
5. Marks Jonathan. English Pronunciation in Use. New Delhi: CUP, 2007.
6. Lynch, Tony. Study Listening. New Delhi. CUP, 2008.
7. Dorling Kindersley. Communication Skills & Soft Skills - An Integrated Approach. India Pvt. Ltd. 2013

## **B.Voc. in Industrial Management Semester – II**

### **Organizational Behaviour**

Course	B.Voc. in Industrial Management (Sem – II)
Course Title	Organizational Behaviour
Credit	02
Teaching per Week	02
Minimum weeks / Semester	30 Hours
Medium of Instruction	English
Course Objective	1. To familiarize the students with human behavior 2. To acquaint the students with organizational behavior
Course Outcome	1. The students would understand the importance of human nature 2. Demonstrate proficiency and understanding of social circles, society and human nature

#### **Course Content**

##### **Unit 1. Introduction to Organizational Behaviour**

- Overview of the field, its importance, historical development, and basic concepts

##### **Unit 2. Perception and Individual Decision Making**

- Examination of how individuals interpret and make sense of their environment and how these perceptions affect decision making

##### **Unit 3. Foundations of Group Behaviour**

- Understanding the dynamics of groups, including formation, structure and group processes

##### **Unit 4. Conflict and Negotiation**

- Understanding the nature of conflict in organizations, conflict resolution strategies and negotiation techniques

##### **References:**

1. Organizational Behaviour by Stephen P. Robbins and Timothy A Judge; Pearson Publication
2. Individual Behaviour in Organization by John Ivancevich and Michael Matteson, Mc Graw-Hill Education; 10<sup>th</sup> Edition, 2020
3. Group Dynamics by Donelson R Forsyth, Cengage Learning, 7<sup>th</sup> Edition, 2018
4. Negotiation: Readings, Exercises and Cases by Roy Lewicki, Bruce Barry and David Saunders, Mc Graw Hill Education, 8<sup>th</sup> Edition, 2020
5. Organizational Behaviour: Text and Cases by K. Aswathappa, Himalaya Publishing House, 11<sup>th</sup> Edition, 2020
6. Organizational Behaviour by S.S. Khanka, S.Chand Publishing, 9<sup>th</sup> Edition, 2020
7. Organizational Behaviour by P. Subba Rao, Himalaya Publishing House, 5<sup>th</sup> Edition, 2019

## **B.Voc. in Industrial Management Semester – II**

### **Business Economics**

Course	B.Voc. in Industrial Management (Sem – II)
Course Title	Business Economics
Credit	02
Teaching per Week	02
Minimum weeks / Semester	30 Hours
Medium of Instruction	English
Course Objective	1. To familiarize the students with economics and its various components 2. To acquaint the students with the market structure
Course Outcome	1. The students would understand the importance of demand and supply and the role of market in the business sector 2. The students will be able to analyse both micro and macro environment and its impact in the Indian context

### **Course Content**

#### **Unit 1. Introduction to Business Economics**

- Overview of Business Economics; Scope and Significance in the Indian context

#### **Unit 2. Demand Analysis**

- Law of Demand and its exceptions; Demand Forecasting techniques; Factors influencing demand in the Indian market

#### **Unit 3. Supply Analysis**

- Law of Supply & its exceptions; Production function and cost analysis; Supply Chain management in Indian businesses

#### **Unit 4. Market Structures**

- Perfect competition; monopolistic competition; Oligopoly and Monopoly; Pricing strategies in Indian markets; Government regulations and their impact on market structures in India

#### **Unit 5. Macroeconomic Environment**

- Indian economy overview; Fiscal and monetary policies in India; Business cycles and their impact on Indian businesses

#### **References:**

1. Business Economics by K.P.M. Sundharam and E. Sundharam; Sultan Chand & Sons
2. Managerial Economics: Analysis, Problems, Cases by P.L. Mehta; Sultan Chand & Sons
3. Indian Economy by Ramesh Sign; McGraw Hill Education
4. Indian Economic Development by Uma Kapila; Academic Foundation

## B.Voc. in Industrial Management Semester – II

### General Production Process – II

Course	B.Voc. in Industrial Management (Sem – II)
Course Title	General Production Process – II
Credit	03
Teaching per Week	03
Minimum weeks / Semester	45 Hours
Medium of Instruction	English
Course Objective	<ol style="list-style-type: none"> <li>1. To understand the problems and opportunities faced by the operations manager in manufacturing and service organizations.</li> <li>2. To develop an ability to apply Production planning and Control (PPC) concepts in a various areas like marketing, accounting, finance, engineering, personnel management, logistics, etc</li> <li>3. To integrate operations concepts with other functional areas of business</li> <li>4. To understand the PPC function in both manufacturing and service organizations.</li> <li>5. To examine several classic Operations Management planning topics including production planning and inventory control</li> </ol>
Course Outcome	<ol style="list-style-type: none"> <li>1. Recognize the objectives, functions, applications of PPC and forecasting techniques.</li> <li>2. Explain different Inventory control techniques.</li> <li>3. Summarize various aggregate production planning techniques.</li> <li>4. Describe way of integrating different departments to execute PPC function</li> </ol>

### Course Content

#### **Unit 1. Production Planning and Control**

- Definition of Production Planning, Brief Idea About Aggregate Production Planning
- Master Production Schedule: Definition, Flow Chart, Objectives, Process Material Requirement Planning: Definitions, Flowchart, Objectives,
- Process Capacity Requirement Planning: Definition, Flow Chart, Methods of Capacity Adjustments
- Scheduling: Definition, Concept of Backward and Forward, Priority Sequencing Rules, Line of balance(LOB), Material Requisition Planning (MRP)

#### **Unit 2. Quality Control And Inspection**

- Inspection - Purpose of Inspection, Types of Inspection
- Methods of Inspection ,Drawbacks of Inspection, Quality Control - Steps in Quality Control
- Objectives of Quality Control , Seven Tools for Quality Control , Statistical Process Control - Control Charts , Acceptance Sampling, Producer's Consumer's Risk

## **B.Voc. in Industrial Management Semester – II**

### **References:**

1. Production Planning and Control: A Comprehensive Approach by D. R. Kiran (1<sup>st</sup> Edition- Butterworth-Heinemann Publisher-ISBN-978-0128183649).
2. Inspection and Quality Control by A.P.Verma (Kararia Publishers-ISBN-978-9350146910).
3. Production planning and Inventory Control – Seetharama L Narasimhan, DennisW,McLeavey, Peter J Billington.
4. Production and Operation Management – S. Anilkumar and N. Suresh – New Age International Publishers.
5. Production and Operation Management – Cherry & Cherry.
6. Production Management – C. B. Gupta.
7. Production and Operation Management – Sharma and Agarwal

## B.Voc. in Industrial Management Semester – II

### Environmental Regulation

Course	B.Voc. in Industrial Management (Semester – II)
Course Title	Environmental Regulations
Credit	02
Teaching per Week	02
Minimum weeks / Semester	30 Hours
Medium of Instruction	English
Course Objective	<ol style="list-style-type: none"> <li>1. To explain the role of law, policy and institutions in the conservation and management of natural resources as well as pollution control</li> <li>2. To introduce the laws and policies both at the national and international level relating to environment</li> <li>3. To equip the students with the skills needed for</li> <li>4. Interpreting laws, policies and judicial decisions</li> </ol>
Course Outcome	<ol style="list-style-type: none"> <li>1. Be familiar with the laws, policies and institutions in the field of environment</li> <li>2. Acquire the skills needed for interpreting laws, policies and judicial decisions in a holistic perspective</li> <li>3. Acquire the ability to evaluate the role of law and policy in conservation and management of natural resources and prevention of pollution</li> </ol>

### Course Content

#### **Unit 1. Regulatory Framework**

- Introduction to environmental laws in India, Stockholm conference
- Bhopal gas tragedy
- Rio conference
- General principles in Environmental law: Precautionary principle; Polluter pays principle
- Sustainable development; Public trust doctrine
- Legal framework on environment protection-Environment Protection Act as the framework legislation–strength and weaknesses; EIA; National Green tribunal

#### **Unit 2. Environmental Impact Assessment**

- Meaning of Environmental Impact Assessment, Process and current report on EIA

#### **Unit 3. Air And Water Quality**

- National Water Policy and some state policies Laws relating to prevention of pollution, access and management of water and institutional mechanism
- Water Act, 1974; Water Cess Act, 1977, EPA, 1986. Pollution Control Boards Ground water and law Judicial remedies and procedures Marine laws of India; Coastal zone regulations
- Legal framework on Air pollution: Air Act,1981

## B.Voc. in Industrial Management Semester – II

### Unit 4. Product Stewardship & Life Cycle Assessment

- Brief Idea about Product Stewardship
- Meaning of Life Cycle Assessment (LCA), stages Of Life Cycle Assessment, role of LC

### Unit 5. Government of India Initiative of clean Environment

- Meaning of sustainable Development and Environmental Sustainability Brief idea about Swachh Bharat Abhiyan
- Other initiatives of Government of India for clean Environment

#### References:

1. Divan S. and Rosencranz A. (2005) Environmental Law and Policy in India, 2 nd ed., Oxford, New Delhi
2. Leelakrishnan P. (2008) Environmental Law in India, 3rd ed., Lexis Nexis, India.
3. Wathern P., "Environmental Impact Assessment: Theory and Practice",Routledge Publishers,1990
4. Marriott B., "Environmental Impact Assessment: A Practical Guide",McGraw-Hill Publication,1997
5. Shrivastava A.K., Baxter Nicola, Grimm Jacob, "Environmental Impact Assessment", APH Publishers, 2003
6. A Handbook of Environment Impact Assessment by V.S. Kulkarni, S.N. Kaul & R.K. Trivedy (Scientific Publishers-ISBN-9788172332990).
7. Article in Journal of Cleaner Production dated January 2016 titled Product Stewardship: Life Cycle Analysis and Environment by Rajni Shrivastav, Banaras Hindu University.

<b>Vocational Training</b>	<b>Hours</b>	<b>Credit</b>
<b>Training in OSH Department</b> - Understanding Occupational Safety and Health SOP and guidelines with respect to respective industry and also having hands on experience for the same.	540	18
<b>Training in Production Department</b> – Understanding Manufacturing processes, material handling and production line and assembly processes and also having hands on experience for the same.		