



University of Engineering and Management

**Institute of
Engineering &
Management, Salt
Lake Campus Institute
of Engineering &
Management, New
Town Campus
University of
Engineering &
Management, Jaipur**

Model Curricular Framework for UG

**Degree in Bachelor in Business
Administration (BBA), Bachelor in
Business Administration (Honours) &
Bachelor in Business Administration
(Honours with Research)**

(Under AICTE)

Following the guidelines of NEP 2020

GENERAL COURSE STRUCTURE & THEME

A. Definition of Credit:

1 Hr. Lecture (L) per week	1 Credit
1 Hr. Tutorial (T) per week	1 Credit
1 Hr. Practical (P) per week	0.5 Credit
2 Hours Practical (P) per week	1 Credit

B. Course code and definition:

Course code	Definitions
L	Lecture
T	Tutorial
P	Practical
CC	Core Courses
AEC	Ability Enhancement Courses
MDE	Multi-Disciplinary Elective course
VAC	Value added Courses
SEC	Skill Enhancement courses
DSE	Discipline Specific Elective
OE	Open Elective

Course Name: Bachelor in Business Administration, Bachelor in Business Administration (Honours) and Bachelor in Business Administration (Honours with Research)

Course Level/Duration/System: Undergraduate / Three or Four years/6 or 8 Semesters with multiple entry and exit. The following option will be made available to the students joining BBA Research Program:

- a. **One year:** Under Graduate Certificate in Business Administration
- b. **Two years:** Under Graduate Diploma in Business Administration
- c. **Three years:** Bachelor in Business Administration (BBA)
- d. **Four years:** Bachelor in Business Administration with Honours: BBA (Honours) and Bachelor in Business Administration Honours with Research: BBA (Honours with Research)

Minimum eligibility criteria for opting the course in the fourth year will be as follows:

- **BBA (Honours with Research):** Minimum 75% marks or equivalent CGPA in BBA Degree up to Sixth Semester.
- **For BBA (Honours):** BBA Degree

Note : The students who are eligible for BBA (Honours with Research) shall have choice to pursue either BBA (Honours) or BBA (Honours with Research).

Semester wise Structure and Curriculum for UG Course in BBA

SEMESTER - I

S. No.	Course Code	Course Title	L	T	P	Credit	Type	CA
3 WEEKS COMPULSORY INDUCTION PROGRAM (UHV-I)								
1	CC	Principles and Practices of Management	3	1	0	4	Th	
2	AEC	Business Communication-I	3	1	0	4	Th	
3	CC	Financial accounting	3	1	0	4	Th	Foundation Course
4	CC	Business Statistics and Logic	3	1	0	4	Th	Foundation Course
5	CC	Business Economics I	3	1	0	4	Th	Foundation Course
6	AEC	General English	1	1	0	2	Ses	
7	MDE	Indian Knowledge System^	2	0	0	2	Ses	
8	VAC	Environmental Science and sustainability	2	0	0	2	Ses	
9	SEC	General Studies & Current Affairs- I	2	0	1	2	Th	
10	VAC	Competitive Aptitude Training-I	2	0	0	1	Ses	Foundation Course
11	AEC	Additional Course - Indian or Foreign Language 1-1-0)) [optional course]*	1	1	0	0*		
TOTAL						29		

Note: ^Indian Knowledge System: Indian Culture and Civilization Indian Vision for Human Society Indian Science Indian Town Planning and Architecture Indian Mathematics and Astronomy Indian Aesthetics Indian Health, Wellness

*Indian Languages: Sanskrit/Hindi/All Regional languages Foreign Languages: Spanish/German/French/Korean/Mandarin

Sl.	Subject Type	Code	Subject Name	Credit/Point/Number
12.		IFC	Industry & Foreign Certification (IFC)	At least 3 certificates need to be earned in each semester. Total min 20 certificates required in 4 years program
13.		MAR181	Mandatory Additional Requirements (MAR)	As per University norms
14.	MOOCs 5	MOOCs	At least 1 MOOCs course from Swayam Platform	20 credits need to be earned in 4 years program





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Syllabus for BBA Admission Batch

2024

Subject Name: Principles and Practices of Management

Credit: 4

Lecture Hours: 48

Subject Code: BBABB101

[Study Material](#)

[COURSERA](#) **MIT [Opencourseware](#)**

[NPTEL](#) **LinkedIn [Learning](#)**

COURSE OBJECTIVES:

1. To enable the students to study the evolution of Management,
2. To study the functions and principles of management.
3. To learn the application of the principles in an organization.
4. To enable the effective and barriers communication in the organization

COURSE OUTCOMES:

CO 1: Students will be able to understand the fundamental concept of management and its importance in the practical world.

CO 2: Students will be able to identify, define and solve management related problems.

CO 3: Students will understand the contemporary issues and will get some wider exposure with respect to the global perspective.

CO 4: Demonstrate how the different concepts of management gets practiced in organizations and evaluate them to identify scope of improvement

Module number	Topic	Sub-topics	Mapping with Industry and International Academia	Lecture Hours	Text
1	Management : Science and Theory, Management : Process	Definition of Management: Its Nature & Purpose. Managing: Science or Art The Evolution of Management Thought The Functions of Management, managerial Functions at Different Organizational Levels. Managerial Skills. The Managerial Roles Approach – Interpersonal Roles, Informational Roles , Decisional Roles.	International Academia: https://ocw.mit.edu/courses/15-270-ethical-practice-leading-through-professionalism-social-responsibility-and-system-design-spring-2016/ Industry Mapping: Industry specific managerial skills and roles.	10	Chapter – 1 and Principles practices manager L. M. Pr Sultan C and Son Publicat Chapter -2 and Principles Manage V.S.P R Himala Publish House
2	Essentials of Planning and Management by Objectives, Strategies, Decision Making	Concept, Types of Plans, Steps in Planning , Objectives – The nature of objectives, how to set objectives, The Strategic Planning Process, The Portfolio Matrix: A Tool For Allocating Resources, The Importance and Limitations of Rational Decision Making , Development of Alternatives and Limiting Factor, Evaluation of Alternatives , Selecting an Alternative	International Academia: https://ocw.mit.edu/courses/15-965-technology-strategy-for-system-design-and-management-spring-2009/resources/mit15_965s09_case21/ Industry Mapping: Optimum allocation of available resources for an organization to meet the objective of the organization.	10	Chapter + 5,6 a Principles practice manage by L. M Prasad. Chand a Sons Publica

3	The Nature of Organizing and Reengineering, Line/ Staff Authority and Decentralization	Formal and Informal Organization Organizational Division: The Department, Organizational Level and Span of Management. Brief concept of Reengineering Line/ Staff Concepts and Functional Authority. Concept of Centralization and Decentralization	International Standards https://ocw.mit.edu/courses/11-958-getting-things-implemented-strategy-people-performance-and-leadership-january-iap-2009/resources/slides2/ Industry Mapping: In the present day dynamic business environment, identifying the nature of organizing best suited for the specific business	10	Chapter – 8, Principles of practice management L. M. Prasad Sultan Chand and Sons and Sons Publications Chapter – 15 Organizational behavior ed, Steffen Robbins Timothy Judge & Nehari Vohra.
4	Motivation, Leadership, The System and Process of Controlling, Managing Change	An Early Behavioural Model: Mc.Gregor's Theory X and Y, Maslow's Hierarchy of Needs Theory, Herzberg's Motivation-Hygiene Theory, The Expectancy Theory of Motivation – The Vroom Theory and Practice, Defining Leadership, Approaches – Trait Approaches to Leadership, Situation or Contingency Approaches to Leadership – Fedler's Contingency Approach to Leadership, Transactional and Transformational Leadership The Basic Control Process, Benchmarking, Control as a Feedback System, Real Time Information and Control Feed-forward and Preventive Control, The Balanced Scorecard, Concept of Gantt Chart, PERT. Techniques for Initiating Change, Resistance to Change, Lewin's Change Management Model	International Standards https://ocw.mit.edu/courses/15-316-building-and-leading-effective-teams-summer-2005/resources/leader_dev/ Industry Mapping: <i>Employee motivation, Approach to leadership, Organizational change</i>	18	Chapter – 7, Organizational behavior ed, Steffen Robbins Timothy Judge & Nehari Vohra. Chapter - 24, Principles of Management V.S.P Ramesh Himalaya Publishing House

Submitted Prof. Sananda Halder

TEXTBOOK:

1. Principles and practices of management by L. M. Prasad. Sultan Chand and Sons Publications
2. Organizational behavior. 18th ed, Stephen P. Robbins, Timothy A. Judge & Neharika Vohra. Pearson
3. Principles of Management, V.S.P Rao, Himalaya Publishing House

REFERENCE BOOKS:

1. Essentials of Management An International and Leadership Perspective: Harold Koontz and Heinz Weihrich , Edition- ninth, McGraw Hill
2. Organizational behavior. 13th ed, Stephen P. Robbins, Timothy A. Judge & Seema Sanghi. Pearson

Subject Name: Business Communication-I

Credit:

4

Lectur

e Hours: 48 Subject Code: BBABB102

[Study Material](#)

[MIT Opencourseware](#)

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COURSE OBJECTIVES:

1. Students will learn to apply business communication theory to solve workplace communication

issues.

2. Students will learn to demonstrate the communication skills required in the workplace.
3. Students will learn to manage resources effectively and efficiently in a professional context.
4. Students will learn to impart the correct practices of the strategies of effective business interactions.

COURSE OUTCOMES:

CO	Details
1	Students will learn to distinguish among various levels of organizational communication and communication barriers while developing an understanding of Communication as a process in an organization.
2	Students will learn to stimulate their Critical thinking by designing and developing clean and lucid interpersonal skills.
3	Students will learn to understand and apply basic principles of critical thinking, problem solving, and technical proficiency in the development of exposition and argument.
4	Students will gain information-seeking skills and strategies necessary for sustaining in professional/ corporate workplace.

Module number	Topic	Sub-topics	Text Book as per Syllabus	Mapping with Industry and International Academia
1	Basics of Communication	<ul style="list-style-type: none"> • Role of Communication • Defining Communication, • Classification of Communication • Purpose of Communication • Elements of Communication, • Major Difficulties of Communication • Common problems in Two-way communication • Barriers to Communication • Conditions for Successful Communication, • Characteristics of Successful Communication, 	The Art and Science of Business Communication: Skills, Concepts, Cases, and Application Fourth Edition by PD Chaturvedi Mukesh Chaturvedi PEARSON Chapter – 1	International Academia: MIT.Edu Industry Mapping: Communication Protocols, Content Strategy, Information Architecture

		<ul style="list-style-type: none"> • Universal Elements in Communication 		
2	Communication in Business Environment	<ul style="list-style-type: none"> • The process of communication: Linear concept, The Shannon-Weaver Model • The two way communication process • Conditions for successful communication • The seven C's of communication • Universal elements in communication 	The Art and Science of Business Communication: Skills, Concepts, Cases, and Application Fourth Edition by PD Chaturvedi Mukesh Chaturvedi PEARSON Chapter - 2	<i>International Academia: MIT.Edu</i> <i>Industry Mapping: Signal Transmission Model, Interactive Communication Strategy, Communication Management Plan, Content Marketing Framework</i>
3	Writing Skills	<ul style="list-style-type: none"> • Applying for Jobs • Writing a CV • The relationship between a Resume and an Application Letter • The Resume of a Recent Graduate • Guidelines for preparing a good CV • Drafting an Application Letter • Business letter • Memo • Notice • Business Report 	The Art and Science of Business Communication: Skills, Concepts, Cases, and Application Fourth Edition by PD Chaturvedi Mukesh Chaturvedi PEARSON Chapter – 12	<i>International Standards MIT.Edu</i> <i>Industry Mapping: Talent Acquisition Strategy, Personal Branding Narrative, Entry-Level Skills Profile, Data-Driven Analysis & Recommendations</i>
4	Communications for Effective Marketing	<ul style="list-style-type: none"> • Objectives of Marketing Communication, • Tools of Marketing Communication, • Some new Tools of Marketing Communication • Consumer, Industrial and Trade Marketing Communication, • Institutional and Corporate Marketing Communication, 	The Art and Science of Business Communication: Skills, Concepts, Cases, and Application Fourth Edition by PD Chaturvedi Mukesh Chaturvedi PEARSON Chapter - 17	<i>International Standards MIT.Edu</i> <i>Industry Marketing Campaign Goals Mapping, Marketing Mix Optimization, Emerging Marketing Channels, Target Audience Segmentation, Brand Reputation Management</i>

		<ul style="list-style-type: none">• Marketing Communication Continuum,• Integrated Marketing Communications			
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**Submitted by Suchana Roy, IEM Saltlake campus*

TEXTBOOK:

1. [The Art and Science of Business Communication: Skills, Concepts, Cases, and Application Fourth Edition by PD Chaturvedi Mukesh Chaturvedi PEARSON](#)

Reference Book:

1. [Effective Technical Communication|2nd Edition McGrawHill](#)
2. [Communication Skills 2E Paperback Sanjay Kumar Pushp Lata OXFORD HIGHER PUBLICATION](#)

Subject Name: Financial Accounting

Credit:

4

Lectur

e Hours: 40 Subject Code: - BBABB103

[Study Material](#)

[MIT Opencourseware](#)

[NPTEL](#)

[LinkedIn Learning](#)

[Coursera](#)

COURSE OBJECTIVES:

1. To help the students to develop cognizance of the importance of financial accountancy.
2. To enable students to read financial statements effectively and aid in decision making process as an investor.
3. To provide the students to analyze financial statements and develop course of action related to financial policies.
4. To enable students to make them understand how the financial instruments work in the market and how they aid in the development of a business.

COURSE OUTCOMES:

- CO 1: Students will be able to comprehend the importance of accounting and its need in everyday life.
- CO 2: Students will develop an understanding on determination of business income and importance of Accounting Standards.
- CO 3: Students will be involved in the preparation of financial statements, and will be able to decipher results out of them.
- CO 4: Students will be well aware of the functions, rules and regulations of the financial sector.

Module number	Topic	Sub-topics	Mapping with Industry and International Academia	Text Book as per syllabus with chapter Nos.	Lecture Hours
1	Introduction to Financial Accounting	Nature of Accounting, Users of Accounting Information, Double Entry Book Keeping System, Accounting Cycle- Journal, Ledger and Trial Balance, Cash Basis and Accrual Basis Accounting.	<i>International Academia: MIT.Edu</i> <i>Industry Mapping: Recording of transactions; recognizing credit and cash transactions</i>	Financial Accounting (A Basu, S Datta) Ch- 1 and 2	10
2	Determination of Business Income	Revenue Recognition, Recognition of Expenses, Depreciation, Methods of Depreciation- SLM and WDV (excluding change in method of depreciation); Concept of Reserves and Provisions	<i>International Academia: MIT.Edu</i> <i>Industry Mapping: Charging Depreciation (in connection to fixed assets)</i>	Financial Accounting (A Basu, S Datta) Ch- 6 (PART A)	10
3	Introduction to Accounting Standards	Importance of GAAP and IFRS, benefits and relevance of accounting standards. Nature of Capital and Revenue Transaction, Differences between capital and revenue transaction.	<i>International Standards MIT.Edu</i> <i>Industry Mapping: Learning the importance of Accounting Standards. Recognizing revenue and capital transactions.</i>	Financial Accounting (A Basu, S Datta) Ch- 10 and 11	10

4	Final Accounts: Preparation of Financial Statements	Importance and relevance of final accounts, why final account is prepared, meaning of gross profit/ net profit/ assets and liabilities. Preparation of Trading Account, Profit and Loss Account and Balance Sheet.	International Standards : MIT.Edu Industry Mapping: Learning the need of preparing financial statements.	Financial Accounting (A Basu, S Datta) Ch- 12	10

Submitted by Suchandra Bose, IEM Ashram campus

TEXTBOOK: 1. Financial Accounting by Prof. Amitabha Basu, Sibasish Dutta, TeeDee Publications

REFERENCE BOOKS:

1. Financial Accounting I, Hanif Mukherjee, Tata McGraw Hill.

CO-PO Mapping:

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	3			1	2	3		1		
CO2	2					3				
CO3	2			2						
CO4	3					2		2		

1= Low(Slight) 2=Moderate(Medium) 3= Substantial (High)

PO & PI Mapping:

PO 1 :Students will develop the capability to assess alternate managerial choices and come up with optimal solutions.
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Competency

Indicators

1.1 Demonstrate competencies in Business Construction Model & Decision-Making Model	1.1.1. Ability to take up analytical approach for problem solving,
1.2 Demonstrate competencies in evaluation of each of the alternatives	1.1.2. Ability to take into consideration minute details and factors that influences a business. 1.2.1 Ability to weigh the pros and cons of each of the alternatives or options available to a functional area of a business.
PO 4 :Communications skills will be enhanced in Synchronization with the functioning of the business analytics algorithms	
Competency	Indicators
4.1 To demonstrate the ability to Make effective communication	4.1.1 Ability to choose appropriate words while making verbal communication
4.2 To Demonstrate the ability to pursue stakeholders and enhancing the convincing skills	4.1.2 To be able to select proper language and words when making written communication
PO5 :: Students will develop the capability of functioning efficiently within the teams	
Competency	Indicators
5.1 To be able to demonstrate the importance of adjustment and the importance of concentrating other group members' opinion.	5.1.1 The ability to apply the behavioral science when functioning within the group.
PO 6: Students will be able to integrate functional areas of management for planning, implementation and control of business decisions	
Competency	Indicators
6.1 Demonstration of the ability to identify gaps in a business strategy ,and to be able to close the gaps.	6.1.1. Continuation of Professional development and observational skills,
6.2 Demonstrate the identification of changing trends in a business and operation of the functional areas accordingly.	6.1.2. Using rational approach towards an issue. 6.2.1. Ability to study the changes in preferences of customers 6.2.2. Study in the changes in political space & professional environment.
PO 8: Students will develop the capability to demonstrate increased level of sensitivity towards areas that require ethical and moral addressing during the course of business.	
Competency	Indicators
8.1 To demonstrate the ability to identify that there is a moral dilemma in professional space.	8.1.1. The ability to identify the confusion or the dilemma that is inexistence.
8.2 Demonstration of the ability to solve the moral dilemma in professional space.	8.2.1. Ability to select the best path that will serve to a big interest of the stakeholders and the society.

Subject Name: Business Statistics & Logic

Credit:

4

Lectur

e Hours: 48 Subject Code: BBABB104

[Study Material](#)

[MIT Opencourseware](#)

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COURSE OBJECTIVES:

1. The course aims to enable the students to have a proper understanding of Statistical applications.
2. The course will help students to understand the use of statistical, graphical and algebraic techniques in Economics and Management.
3. The course is designed to give basic concept of descriptive statistics.
4. The course is designed to give basic concept Correlational & regression analysis.

COURSE OUTCOMES:

CO	Details
1	Ability to understand the concept of Statistics & its use.
2	Ability to solve and understand simple central tendency & dispersion problems
3	Ability to deduce Different moment & correlational analysis
4	Ability to understand basic regression & its application

Module number	Topic	Sub-topics	Text Book as per Syllabus	Mapping with Industry and International Academia	L F
1	Introduction to Statistics	<p>1. Introduction to Statistics; Collection, Editing and Presentation of Data: Primary Data and Secondary Data, Methods of Collection, Presentation of Data: Construction of a Table and the Different Components of a Table.</p> <p>2. Frequency Distributions- Attribute and variable; Frequency distribution of an attribute; Discrete and continuous variables; Frequency distributions of discrete and continuous variables. Different diagrammatic representation of a frequency distribution:</p>	<p>Managerial Statistics – S. Roychowdhury & D. Bhattachaya, U.N.Dhur Publication</p> <p>Chapter – 1,2,3</p>	<p><i>International Academia:</i> MIT OpenCourse</p> <p><i>Industry Mapping:</i> Concept of statistics & its importance</p>	
2	Measures of Central tendency	<p>Measures of Central Tendency- Introduction, Definition and utility; Different measures of average; Arithmetic Mean; Results on Arithmetic Mean; Merits and Demerits of Arithmetic Mean; Median; Mode; Other positional measures.</p>	<p>Managerial Statistics – S. Roychowdhury & D. Bhattachaya, U.N.Dhur Publication</p> <p>Chapter - 4</p>	<p><i>International Academia:</i> MIT OpenCourse</p> <p><i>Industry Mapping:</i> Concept of central tendency & application</p>	
3	Measures of Dispersion	<p>Measures of Dispersion- Introduction; Meaning and objective of dispersion; Different measures of dispersion – Range, Quartile deviation, Mean deviation, Mean Absolute deviation, Standard deviation.</p>	<p>Managerial Statistics – S. Roychowdhury & D. Bhattachaya, U.N.Dhur Publication</p> <p>Chapter – 5 (Upto 5.6)</p>	<p><i>International Standards:</i> MIT OpenCourse</p> <p><i>Industry Mapping:</i> Concept of dispersion & application</p>	

4	Measures of Moment, Skewness & Kurtosis	Moments, Skewness and Kurtosis: Moments: Different Ways to Calculate Moments. Skewness: Measures of Skewness, Kurtosis and its Measures.	Managerial Statistics – S. Roychowdhury & D. Bhattachaya, U.N.Dhur Publication Chapter - 6	<i>International Standards:</i> MITOpenCourse <i>Industry Mapping:</i> Concept of shape of data and its interpretation
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**Submitted by Sreeparna Guha, IEM Saltlake campus*

TEXTBOOK:

1. [Managerial Statistics – S. Roychowdhury & D. Bhattachaya, U.N.Dhur Publication](#)

Reference Book:

[Business Mathematics and Statistics – Ranajit Dhar, Dishari Prakashani.](#)



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Syllabus for BBA Admission Batch

2024

Subject Name: Business Economics I

Credit:

Lectur

e Hours: 48 Subject Code: BBABB105

[Study Material](#)

[MIT Opencourseware](#)

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[LinkedIn Learning](#)

COURSE OBJECTIVES:

1. To enable the students to understand fundamental concepts, terms and terminologies involved in Economics
2. Through the incorporation of case lets/case studies, familiarize the students with real economic scenarios.
3. To make students understand the different types of markets and its equilibrium level of price and quantity determination process.

COURSE OUTCOMES:

CO 1: Students would be able to understand the fundamental problems of a business economics and its solutions techniques. They also able to understand the driving force behind the change in market price of commodity and its elasticity of demand.

CO 2: Students would be able to understand the economies and diseconomies of scale in production and the different types of costs associated with the production process.

CO 3: Students would be able to understand the different types of markets and its equilibrium level of price and quantity determination process under perfect competition, monopoly, monopolistic competition and oligopoly market.

CO 4: Students would be able to understand the different types of factors of productions and their prices.

Module number Course content:	Topic	S u b - t o p i	Text Book	Mapping with Industry and International Academia	Le c t u r e H o u r s	Corresponding Lab Assignment
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Course content:		c s				
M 1	<ol style="list-style-type: none"> 1. Nature & Scope of Economic Theory 2. Demand and Demand Function 3. Consumer's Behaviour: Cardinal Utility Analysis 4. Indifference Curve Analysis of Demand 5. Elasticity of Demand 	<p>The Economic Problem- Scarcity and Choice, The Scope of Economic Theory and Basic Economic Problems. The Problem of Allocation of Resources. Choice of a Production Method. The Problem of Distribution of National Product. The Problem of Economic Efficiency. The Problem of Full Employment of Resources. The Problem of Economic Growth. Problem of Scarcity vs. Problem of Affluence. - Production Possibility Curve: A Basic Tool of Economics. Economic Growth and Shift in Production Possibility Curve. Production Possibility Frontier and the Law of Increasing Opportunity Cost. Production Possibility Curve and Basic Economic Questions.</p> <p>Significance of Demand Function. Individual Demand. Demand Function. Law of Demand. Reasons for the Law of Demand: Why does Demand Curve Slope Downward? Market</p>	<p><i>Advanced Economic Theory, Micro Economic Analysis. HL Ahuja, S Chand</i></p> <p><i>Ch- 1, 6,7,8,14</i></p>	<p><i>International Academia:</i> https://ocw.mit.edu/courses/14-01-principles-of-microeconomics-fall-2018/video_galleries/lecture-videos/</p> <p><i>Industry Mapping:</i> Business decision making.</p>	12	Case Study

		<p>Demand Function. Relationship between Demand Function and Demand Curve. Factors Determining Demand.</p> <p>Introduction. The Concept of Utility. Amartya Sen's Critique of the Concept of Utility. Law of Diminishing Marginal Utility; Consumer's Equilibrium: Principle of Equi-marginal Utility. Consumer Preferences. Indifference Curve Approach. What are Indifference Curves? Marginal Rate of Substitution. Properties of Indifference Curves. Budget Line or Budget Constraint. Consumer's Equilibrium: Maximising Satisfaction.</p> <p>Various Concepts of Demand Elasticity. Price Elasticity of Demand. Perfectly Inelastic and Perfectly Elastic Demand. Measurement of Price Elasticity. Determinants of Price Elasticity of Demand. Cross Elasticity of Demand. Income Elasticity of Demand.(Numerical).</p>				
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M 2	<p>1. Theory of Production: Returns to a Variable Factor</p> <p>2. Production Function with Two Variable Inputs</p> <p>3. Cost Analysis</p>	<p>Introduction. Production Function. Production Function with One Variable Factor: Total, Average and Marginal Physical Products. Law of Variable Proportions: Three Stages of Production. The Stage of Operation. Causes of Initial Increasing Marginal Returns to a Variable Factor. Causes of Diminishing Marginal Returns. Causes of Negative Marginal Returns.</p> <p>Isoquants. Marginal Rate of Technical Substitution. General Properties of Isoquants. Isoquants of Perfect Substitutes and Complements. Returns to Scale— Changes in Scale and Factor Proportions. Constant Returns to Scale. Divisibility of Factors/Constant Returns to Proportionality and Scale. Increasing Returns to Scale. Decreasing Returns to Scale (Concepts only).</p> <p>Introduction. Technological Efficiency Versus Economic Efficiency. The Concepts of Cost: Opportunity Cost; Historical Costs as Sunk Costs; Accounting Costs and Economic Costs. Theory of Cost. Cost Functions: Short Run and Long Run. Total, Fixed and Variable Costs in the Short Run. The Short-Run Average</p>	<p><i>Advanced Economics Theory, Micro Economics Analysis. HL Ahuja, S Chand</i></p> <p><i>Chapters: 18,19, 21</i></p>	<p><i>International Academia:</i> https://ocw.mit.edu/courses/14-01-principles-of-microeconomics-fall-2018/video_galleries/lecture-videos/</p> <p><i>Industry Mapping:</i> <i>Cost & output decisions</i></p>	12	Case Study
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		and Marginal Cost Curves. Relationship Between Marginal Cost and Marginal Physical Product. Derivation of Short-Run Average and Marginal Cost Curves from their Total Cost Curves. Theory of Long-Run Costs: Long-Run Average Cost Curve.				
M 3	<p>1. Market Structures and Concepts of Revenue for a Firm</p> <p>2. Equilibrium of the Firm and Industry Under Perfect Competition</p> <p>3. Price and Output Determination under Monopoly</p> <p>4. Price Discrimination</p> <p>5. Price and Output Determination under Monopolistic Competition</p> <p>6. Price and Output Determination under Oligopoly</p>	<p>Meaning of Market. Classification of Market Structures. Total, Average and Marginal Revenue and their Relationship. Deriving Average and Marginal Revenue Curves from Total Revenue Curve. Conditions of Perfect Competition. Demand Curve of a Product Facing a Perfectly Competitive Firm. Short-run Equilibrium of the Competitive Firm. Shutting Down in the Short-run. Long-run Equilibrium of the Firm Under Perfect Competition. Short-run Supply Curve of the Perfectly Competitive Firm.</p> <p>Monopoly: Its Meaning and Conditions. Sources or Causes of Monopoly. The Nature of Demand and Marginal Revenue Curves under Monopoly. Relation between Marginal Revenue</p>	<p><i>Advanced Economic Theory, Micro Economic Analysis. HL Ahuja, S Chand</i></p> <p><i>Chapters: 24,28, 32,33, 36,40</i></p>	<p><i>International Standards</i></p> <p>https://ocw.mit.edu/courses/14-01-principles-of-microeconomics-fall-2018/video-galleries/lecture-videos/</p> <p><i>Industry Mapping:</i></p> <p><i>Understanding different market structures and how different markets work</i></p>	12	Case Study

		<p>and Price. MR, Price and Elasticity of Demand under Monopoly. Price-Output Equilibrium under Monopoly.</p> <p>Meaning of Price Discrimination. Degrees of Price Discrimination: Price Discrimination of the First Degree, Price Discrimination of the Second Degree, Price Discrimination of the Third Degree.(Concepts only)</p> <p>Imperfect Competition: Monopolistic Competition and Oligopoly. Product Differentiation and Monopolistic Competition, Important Features of Monopolistic Competition. Price-Output Equilibrium under Monopolistic Competition. Excess Capacity under Monopolistic Competition.</p> <p>Characteristics. Indeterminate Pricing and Output. Price Leadership (Only Meaning and Characteristics). Collusive Oligopoly (Meaning and Characteristics Only). Kinked Demand Curve.</p>				
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M 4	<p>1) Concept of Rent</p> <p>2) Theory of Interest</p> <p>3) Theory of Profit</p>	<p>Introduction. Ricardian Theory of Rent</p> <p>Introduction. Classical Theory of Interest. Loanable Funds Theory of Interest. Keynes's Liquidity Preference Theory of Interest</p> <p>Introduction. Innovations and Profits: Schumpeter's Theory of Profits. Risk, Uncertainty and Profits: Knight's Theory of Profits.(Concepts only)</p>	<p><i>Advanced Economic Theory, Micro Economic Analysis. HL Ahuja, S Chand</i></p> <p><i>Chapters: 55,56, 57</i></p>	<p><i>International Standards</i></p> <p>https://ocw.mit.edu/courses/14-01-principles-of-microeconomics-fall-2018/video_galleries/lecture-videos/</p> <p><i>Industry Mapping:</i></p> <p><i>Determination of factor prices</i></p>	12	Case Study
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TEXTBOOK: *Advanced Economic Theory, Micro Economic Analysis. HL Ahuja, S Chand*

CO-PO Mapping:

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
BBA105-CO1	3	2	3			2	1	
BBA105-CO2	2	3	3				2	
BBA105-CO3	2	3	2				2	
BBA105-CO4	2	3	2				2	

1= Low(Slight) 2=Moderate(Medium) 3= Substantial (High)

PO & PI Mapping:

PO1: Assessment of Choices	
Students will develop the capability to assess alternate managerial choices and come up with optimal solutions.	
Competency	Indicators
1.1 Demonstrate competencies in Business Construction Model & Decision-Making Model	1.1.1. Ability to take up analytical approach for problem solving, 1.1.2. Ability to take into consideration minute details and factors that influences a business.
1.2 Demonstrate competencies in evaluation of each of the alternatives	1.2.1 Ability to weigh the pros and cons of each of the alternatives or options available to a functional area of a business.
PO 2 : Identification of the Nature of a Problem Area	
Students will be able to apply their conceptual understanding of marketing, finance and human resources in the real world.	
Competency	Indicators

<p>2.1. Demonstrate an ability to identify an area that requires problem solving.</p> <p>2.2 Demonstrate an ability to assess the business environment and understand their impact on the business.</p>	<p>2.1.1 Ability to evaluate problem statement and contribute towards problem solving methods,</p> <p>2.1.2 understanding a problem or issue belong to demand analysis.</p> <p>2.2.1 To be able to identify the different types of demand elasticity which influence the decision-making process.</p>
<p>PO 3 : Decision Making Skills Students will develop decision making skills with the help of analytical and critical thinking ability.</p>	
<p>Competency</p>	<p>Indicators</p>
<p>3.1 To be able to demonstrate the different aspects that can get influenced by the decision taken within the business.</p> <p>3.2 To be able to demonstrate the optimal solution or close to an optimal solution to a given managerial problem.</p>	<p>3.1.1 Capability of identify the different types of costs and production,</p> <p>3.1.2 Follow up the changes of market structures and its applications</p> <p>3.2.1 Reaching to a solution and evaluating it after observing the changes</p>
<p>PO6: Integration of Functions: Students will be able to integrate functional areas of management for planning, implementation and control of business decisions.</p>	
<p>Competency</p>	<p>Indicators</p>
<p>6.2 Demonstrate the identification of changing trends in a business and operation of the functional areas accordingly.</p>	<p>6.2.1. Ability to study the changes in preferences of customers</p> <p>6.2.2. Study in the changes in political & technological environment</p>
<p>PO7: DeployableSkill set: Students willdevelop deployableskills parallel to thechosen functional/specialized area.</p>	
<p>Competency</p>	<p>Indicators</p>
<p>7.1 Demonstratingthe ability toidentify the natureof a problemappearing duringthe course ofbusiness.</p> <p>7.2 Demonstratingthe ability to applythelearnedskillset as whenrequired.</p>	<p>7.1.1Acknowledgementofthe existence of aproblem,</p> <p>7.1.2 Deciding theoverall nature of theproblem and its minordetails.</p> <p>7.2.1. Ability toimplementtherequiredknowhow as whenecessityarises.</p>

Paper Name: General English	
Paper Code: AEC	
L-T-P: 1-1-1	Credit: 2

Subject Code: BBABB 181

Total Lecture: 32L

Course Objectives

- To acquire language skills,
- to develop linguistic and communicative competencies for Engineering students.
- to study academic subjects more effectively using the theoretical and practical components of English syllabus, and hence will develop study skills and communication skills in formal and informal situations.
 - tter, Complaint letter, Handling of Complaint)

Module 1 : Applied Grammar [9L]

Common Errors in English

- Subject-verb agreement
- Tenses
- Articles and Prepositions

Transformation of Sentences

- Active and Passive voice
- Direct and Indirect speech
- Degrees of Comparison

Synthesis of Sentences: Simple, Complex and Compound

Module 2: Technical Writing Skill & Communication [5L]

- Comprehension: unseen passage (Factual and Descriptive)
 - Editorial letters
- Business Letters (Order letter, Complaint letter, Handling Of Complaints)
- Group Discussion
- Extempore

Module 3 Vocabulary Building [4L]

The concept of word formation: Compounding, Backformation, Clipping and Blending
 Root words from foreign languages and their use in English
 Acquaintance with prefixes and suffixes from foreign languages in English to form derivatives.
 Synonym, antonym, phrasal verbs, one word substitution and standard abbreviation

Module 4 Basic Writing Skills [4L]

Documenting: definition, meaning, basic concept of documenting (print and online media), types of technical documents

Importance of proper punctuation

Creating coherence: Arranging paragraphs & Sentences in logical order
Creating Cohesion: Organizing principles of paragraphs in documents
Techniques for writing precisely

Module 5 Professional Writing Skills [10L]

Technical Report Writing: Types and formats

Comprehension, Précis and Expansion Writing, Essay Writing, Writing SOPs and Project Proposals.

Business Letters; Cover letter &

CV Office Correspondence:

- Notice
- Agenda
- Minutes
- Memo
- E-mail

Course Outcomes(COs)

CO1. Understanding the mechanism of interpretation through language learning by practicing reading, writing and comprehension skills.

CO2. Understanding complex engineering problems by a sound grammatically correct knowledge of the English Language & honing writing, and reading skills for software research, solutions, marketing etc.

CO3. Equipping learners to solve various problems related to aptitude test through the practice of various Verbal reasoning and grammar practice.

CO4. Development of analytical thinking through practice of analytical essays, business correspondence.

CO5. Learning effective communication strategies for handling criticism and adverse remarks and also knowing strategies of effective intervention, kinesics and courtesies and different components of soft skills.

CO6. Awareness about the society, public health and safety, growth and changes in society, culture and environment through comprehension, technical report writing practice.

Learning Resources

1. High School English Grammar by Wren and Martin
2. Common Errors in English by S.Prasad & K.P.Thakur,Bharti Bhhawan Publishers
3. Business Correspondence and Report Writing – R.C. Sharma and Krishna Mohon, TataMcGraw-Hill Publishing company Ltd., New Delhi
4. English Vocabulary in Use- McCarthy
5. Speaking Effectively, Developing Speaking Skills for Business English, Jeremy Comfort-Cambridge University Press, 1994
6. Practical English Usage. Michael Swan. OUP. 1995.
7. Remedial English Grammar. F.T. Wood. Macmillan.2007
8. A Practical English Grammar – A.J. Thomson, A.V. Martinet – Oxford University Press
9. Guide to writing as an Engineer, John Willey - David F.Beer and David McMurrey,. NewYork, 2004

Subject Name: Indian Knowledge System (IKS)

Credit: 2

Lecture

Hours:20 Subject Code:BBABB182

[Study Material](#)

[AICTE Open course ware](#)

[NPTEL](#)

COURSE OBJECTIVES:

1. Creating awareness amongst the youths about the true history and rich culture of the country.
2. Understanding the scientific value of the traditional knowledge of Bhārata.
3. Promoting the youths to do research in the various fields of Bhāratīya knowledge system.
4. Converting the Bhāratīya wisdom into the applied aspect of the modern scientific paradigm.
5. Adding career, professional and business opportunities to the youths.

COURSE OUTCOMES:

CO 1: Understand the diverse paths of spirituality in Bhartiya culture, including Gyaan Marg, Bhakti Marg, Karm Marg, and Yog Marg, and recognize their significance in individual and collective spiritual growth

CO 2: Evaluate the Bhartiya philosophy of life derived from Shastras and analyze its implications for contemporary Bhartiya lifestyles, fostering a deeper understanding of the connection between spirituality and everyday life.

CO 3: Demonstrate knowledge of various Indian knowledge systems, such as Ayurveda, Vedic sciences, Yoga, Vedanta, and Jyotish, and appreciate their contributions to human knowledge and well-being.

CO 4: Analyze the Bhartiya wisdom related to life sciences, including physics, chemistry, and botany, as described in ancient texts, and understand their relevance and potential applications in contemporary scientific research.

Module No.	Topic	Sub topics	Mapping with Industry and International Academia	Lecture Hours	Corresponding Lab Assignment	Text Book Chapter No.
1	Indian Knowledge System – An Introduction, The Vedic Corpus, and Wisdom through the Ages	<ol style="list-style-type: none"> 1. What is IKS? 2. Why do we need IKS? 3. Organization of IKS 4. Historicity of IKS 5. Some salient aspects of IKS 6. Introduction to Vedas 7. A synopsis of the four Vedas 8. Sub-classification of Vedas 9. Messages in Vedas 10. Gateways of ancestral wisdoms 11. Introduction to Purāṇa 12. The Purāṇic repository 	<p><i>International Academia:</i> AICTE Web Link</p> <p><i>Industry Mapping:</i></p> <ul style="list-style-type: none"> • Application of ancient wisdom in modern management practices. • Understanding historical context for contemporary leadership and decision-making. • Incorporating holistic and ethical approaches derived from IKS in business strategies. 	2	1. Case study analysis of a modern business applying principles from the Vedic corpus.	Chapter-1,2,3,4 (Mahadevan, B., Bhat Vinayak Rajat, Nagendra Pavana R.N. (2022), “Introduction to Indian Knowledge System: Concepts and Applications”, PHI Learning Private Ltd. Delhi)
2	Number Systems and Units of Measurement	<ol style="list-style-type: none"> 1. Number systems in India – Historical evidence 2. Salient aspects of Indian Mathematics 3. Bhūta-Saṃkhyā system 4. Kaṭapayādi system 5. Measurements for time, distance, and weight 6. Piṅgala and the binary system 	<p><i>National Standards</i> AICTE Web Link</p> <p><i>Industry Mapping:</i></p> <ul style="list-style-type: none"> • Integration of ancient numerical systems in modern computing and data processing. • Application of historical measurement techniques in contemporary project management and logistics. 	3	1. Practical exercise in applying ancient measurement techniques to a real-world scenario in project planning.	Chapter- 6 (Mahadevan, B., Bhat Vinayak Rajat, Nagendra Pavana R.N. (2022), “Introduction to Indian Knowledge System: Concepts and Applications”, PHI Learning Private Ltd. Delhi)
3	Mathematics	<ol style="list-style-type: none"> 1. Introduction to Indian Mathematics 	<p><i>National Standards</i> AICTE Web Link</p>	3	1. Solve modern algebraic	Chapter- 8 (Mahadevan, B.,

		<p>2. Unique aspects of Indian Mathematics</p> <p>3. Indian Mathematicians and their Contributions</p> <p>4. Algebra</p> <p>5. Geometry</p> <p>6. Trigonometry</p> <p>7. Binary mathematics and combinatorial problems in ChandahŚāstra</p> <p>8. Magic squares in India</p>	<p>Industry Mapping:</p> <ul style="list-style-type: none"> • Use of historical mathematical concepts in financial modeling and risk assessment. • Implementation of ancient algebra and geometry in modern engineering and technology. 		<p>problems using methods from Indian mathematicians.</p> <p>2. Develop a project using principles of Indian geometry and trigonometry to solve engineering challenges.</p>	<p>Bhat Vinayak Rajat, Nagendra Pavana R.N. (2022), “Introduction to Indian Knowledge System: Concepts and Applications”, PHI Learning Private Ltd. Delhi)</p>
4	Astronomy	<p>1. Introduction to Indian astronomy</p> <p>2. Indian contributions in astronomy</p> <p>3. The celestial coordinate system</p> <p>4. Elements of the Indian calendar</p> <p>5. Notion of years and months</p> <p>6. Pañcāᅅga – The Indian calendar system</p> <p>7. Astronomical Instruments (Yantras)</p> <p>8. Jantar Mantar of Rājā Jai Singh Sawai</p>	<p>National Standards AICTE Web Link</p> <p>Industry Mapping:</p> <ul style="list-style-type: none"> • Application of Indian astronomical knowledge in modern space research and astrophysics. • Utilizing traditional celestial coordinate systems in navigation technologies. 	4	<p>1. Create a model of the Indian calendar system and compare it with the Gregorian calendar.</p> <p>2. Build a simple astronomical instrument inspired by the Jantar Mantar and demonstrate its use.</p>	<p>Chapter 9 (Mahadevan, B., Bhat Vinayak Rajat, Nagendra Pavana R.N. (2022), “Introduction to Indian Knowledge System: Concepts and Applications”, PHI Learning Private Ltd. Delhi)</p>
5	Health Wellness and Psychology	<p>1. Distinguish thought on Health and wellness in Indian system</p> <p>2. Ayurveda: approach to health</p> <p>3. Ayurveda: definition of health</p> <p>4. Tri-doᅅas</p> <p>5. Role of agni in health</p>	<p>National Standards AICTE Web Link</p> <p>Industry Mapping:</p> <ul style="list-style-type: none"> • Application of Ayurveda and Indian wellness practices in modern healthcare and lifestyle industries. 	4	<p>1. Design a daily wellness regimen based on Ayurveda principles for a corporate environment.</p> <p>2. Create a case</p>	<p>Chapter 13 (Mahadevan, B., Bhat Vinayak Rajat, Nagendra Pavana R.N. (2022), “Introduction to Indian Knowledge System: Concepts</p>

		<p>6. Sapta-dhātavaḥ: seven-tissues</p> <p>7. Psychological aspects of health</p> <p>8. Disease management elements</p> <p>9. Dinacaryā: daily regimen for health & wellness</p> <p>10. Importance of sleep</p> <p>11. Food intake methods and drugs</p> <p>12. Approach to lead a healthy life</p> <p>13. Indian approach to psychology</p> <p>14. Basic tenets of Indian psychology</p> <p>15. The tri-guṇa system & holistic picture of the individual</p> <p>16. Prakṛti and its evolution and nature of individual</p> <p>17. The Pañca-kōṣa framework</p> <p>18. Four states of Consciousness</p> <p>19. Consciousness studies: An Indian approach</p>	<ul style="list-style-type: none"> Utilizing Indian psychological frameworks in corporate wellness programs and employee mental health. 		<p>study on the implementation of Indian psychological approaches in enhancing workplace productivity and well-being.</p>	<p>and Applications”, PHI Learning Private Ltd. Delhi)</p>
6	Town Planning and Architecture	<p>1. Temple architecture in ancient India, Sculptures, Theatre, Drama and Martial arts traditions, Fairs and festivals, Yoga,</p> <p>2. Integrated approach to healthcare,</p> <p>3. Approaches and</p>	<p><i>National Standards</i> <u>AICTE Web Link</u></p> <p><i>Industry Mapping:</i></p> <ul style="list-style-type: none"> Implementation of ancient Indian architectural principles in sustainable urban 	4	<p>1. Develop a sustainable urban planning model incorporating ancient Indian architectural techniques.</p>	<p>Chapter 12 (Mahadevan, B., Bhat Vinayak Rajat, Nagendra Pavana R.N. (2022), “Introduction to Indian Knowledge System: Concepts</p>

		strategies to the protection and conservation of environment.	planning. • Conservation strategies for heritage sites and their adaptation in modern architecture.			and Applications”, PHI Learning Private Ltd. Delhi)
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Submitted by Manali Chowdhury, IEM Saltlake campus

TEXTBOOK: 1. [Mahadevan, B., Bhat Vinayak Rajat, Nagendra Pavana R.N. \(2022\), “Introduction to Indian Knowledge System: Concepts and Applications”, PHI Learning Private Ltd. Delhi](#)

REFERENCE BOOKS:

1. Pride of India: A Glimpse into India’s Scientific Heritage, Samskrita Bharati, New Delhi.
2. Sampad and Vijay (2011). “The Wonder that is Sanskrit”, Sri Aurobindo Society, Puducherry.
3. Acarya, P.K. (1996). Indian Architecture, Munshiram Manoharlal Publishers, New Delhi.
4. Banerjea, P. (1916). Public Administration in Ancient India, Macmillan, London.
5. Kapoor Kapil, Singh Avadhesh (2021). “Indian Knowledge Systems Vol – I & II”, Indian Institute of Advanced Study, Shimla, H.P.

CO-POMapping: (PO- As per AICTE)

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	Engineering Knowledge	Problem Analysis	Design & Development	Analysis, Design, Research	Modern Tool Usage	Society & Culture	Environment & Sustainability	Ethics	Individual & Team Work	Communication	Project Mgt. & Finance	Life Long Learning

BBABB182CO1						3	2	3				3
BBABB182CO2						3	2	3				3
BBABB182CO3						3		3				3
BBABB182CO4						3		3				3

1= Low (Slight) 2= Moderate (Medium) 3= Substantial (High)

IKS Lectures and Videos uploaded on IKS YouTube Channel. ⇒[Link](#)

Study Material and Notes⇒[Link](#)

Subject Name: Environmental Science and Sustainability

Credit: 2

Lecture Hours:

20

Subject Code: BBABB183

Pre-requisite: Environmental studies

Relevant Links:

[Study Material](#)

[Coursera](#)

[NPTEL](#)

[LinkedIn Learning](#)

[Infosys Springboard](#)

COURSE OBJECTIVES:

1. To introduce basic postulates of environment and nature and to introduce sustainability development for understanding the environment expressions.
2. To study about ecosystem for the analysis and design of food chains, food webs and biodiversity.
3. To introduce the basics of global warming, effects, causes, measures and Kyoto protocol
4. To illustrate the concept of Environment Management System and some concept of audit, green rating project.

COURSE OUTCOMES:

CO 1: Students will have a thorough knowledge of multidisciplinary nature and sustainable development also they will apply that knowledge while required.

CO 2: After completing this course, the students will be able to design and analyze about Nature ecosystem.

CO 3: Students will acquire a knowledge about Global warming and climate changes.

CO 4: They will be able understand what is EMS and also, they will acquire knowledge on conducting audits and

green rating project.

Module Number	Topic	Sub-topics	Text Book as per Syllabus	Mapping with Industry and International Academia	Lecture Hours	Corresponding lab/Case Study Assignment
1	Realm of Ecology	Introduction, Multidisciplinary nature, Scope and importance; the need for environmental education. Concept of sustainability and sustainable development. Study of environmental management in Management Schools	Environmental management by N.K Uberoi 2nd Edition Chapter No. 1 (Page No. 2,3,8,15,16) Chapter No. 2 (Page No. 24,25, 28, 29)	<i>International Academia:</i> (Readings Sustainable Economic Development Urban Studies and Planning MIT OpenCourseWare) <i>IndustryMapping:</i> GIS Data design in ecological modeling	5	1.Case Study and Assignment

2	Ecosystem and Biodiversity	Ecosystems: Definition, Structure: food chains, food webs and function of ecosystem, Industrial ecology, Biodiversity and Conservation – Levels, Acquisition of Biological Wealth	Environmental management by N K Uberoi 2nd Edition Chapter No. 14	International Standards (Readings Energy, Environment, and Society: Global Politics, Technologies, and Ecologies of the Water-Energy-Food Crises Science, Technology, and Society MIT OpenCourseWare) Industry Mapping: UKNEA (2011) and Newton et al. (2012a)	5	1. Environmental Audit of the Campus (Students can assess energy consumption, waste generation, water usage, and pollution levels. Based on their findings, propose strategies for improving environmental performance).
3	Global Environment Problem	Global Warming, Effects, How to Combat Global Warming, Climate Change, Kyoto Protocol, Climate Change and Business	Environmental management by N K Uberoi 2nd Edition Chapter No. 5 (Page No. 86 – 95)	International Standards : (Readings Global Warming Science Earth, Atmospheric, and Planetary Sciences MIT OpenCourseWare) Industry Mapping: GIS Application	5	1. Impact Assessment (Assign students to research and present the various impacts of global warming on different sectors (ecosystems, agriculture, sea level rise, extreme weather events, etc.).

4	Environmental Management System	Installing EMS, Why EMS, Certification for EMS, Environmental Standards, ISO 14000(Series)- The Basic Principles, Actual Conduct of Audit Certification, The Indian Scene, Green rating project	<u>Environmental management by N K Uberoi 2nd Edition</u> Chapter No. 10	<i>International Standards:</i> (Readings Introduction to Environmental Policy and Planning Urban Studies and Planning MIT OpenCourseWare) <i>IndustryMapping:</i> GIS Software and Digital elevation model	5	1. Sustainability Assessment of Products (Ask students to select any day-to-day products and conduct a life cycle analysis to assess their environmental impact. They should evaluate raw material extraction, production, transportation, use, and disposal phases, and propose alternatives or improvements for sustainability)
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*Submitted by Priyanka Singh, IEM Saltlake Campus

TEXT BOOK:

- 1. Environmental management by N K Uberoi 2nd Edition**

REFERENCE BOOKS:

1. Environmental management by N K Uberoi 2nd Edition Reference:
2. A Textbook Environment by KM. Agrawal; PK. Sikdar; SC Deb
3. Environmental Management by GN Pandey