

INDIAN INSTITUTE OF TECHNOLOGY ROORKEE

NAME OF DEPARTMENT/CENTRE: Department of Design

1. **Subject Code:** IDN-503 **Course Title:** Design Thinking
2. **Contact Hours:** **L:** 1 **T:** 0 **P:** 4
3. **Examination Duration (Hrs.):** **Theory:** 2 **Practical:** 0
4. **Relative Weightage:** **CWS:** 20-35 **PRS:** 20-30 **MTE:** 20-30 **ETE:** 40-50 **PRE:** 0
5. **Credits:** 3 **6. Semester:** Autumn **7. Subject Area:** PCC
8. **Pre-requisite:** Nil
9. **Objective:** To develop courage amongst young designers to think and design creatively in order to develop innovative products based on user's need.

10. Details of the Course

S.No.	Contents	Contact hours
1.	Design Thinking: Introduction, key concepts, terminologies.	2
2.	Process of Design Thinking: Steps involved and applications.	2
3.	Empathy: Role of empathy, process of empathizing people, user interviews.	2
4.	Define: Methods for identifying challenges and designer's point of view.	2
5.	Ideate: Elements and thinking modes, ideation techniques.	2
6.	Prototype: Types of prototypes, methods and techniques for prototyping.	2
7.	Testing: Feedback from users, getting honest feedback, improving design.	2
Total		14

Studio/Project Work:

The practical work will include design studio workshops leading to ideation and brainstorming. The innovative design thinking strategies will be employed to create a habit of inquisitiveness among the students. The process of conducting user interviews leading to identification of needs and recording of the information in standard templates will be undertaken. The user defined needs will be analyzed and product concepts leading to the first form of prototypes will be the major deliverable of the course.

11. Suggested Books:

S.No.	Name of Authors/Book/Publisher	Year of Publication / Reprint
1.	Tim Brown, 'Change by Design: How Design Thinking Transforms Organizations and Inspires Innovation' Harper Business	2009
2.	Roger L. Martin, 'The Design of Business: Why Design Thinking is the Next Competitive Advantage' Harvard Business Review Press	2009
3.	Tom Kelley, Jonathan Littman, Tom Peters 'The Art of Innovation: Lessons in Creativity from IDEO, America's Leading Design Firm' Broadway Business	2001

4.	John Christopher Jones, "Design Methods-Seeds of Human Future" John Wiley and Sons.	2008
5.	Thomas T. Woodson, "Introduction to Engineering Design" McGraw-Hill.	2001

INDIAN INSTITUTE OF TECHNOLOGY ROORKEE

NAME OF DEPARTMENT/CENTRE: Department of Design

1. **Subject Code:** IMN-503 **Course Title:** Effective Communication
2. **Contact Hours:** L: 1 T: 1 P: 0
3. **Examination Duration (Hrs.):** Theory: 0 Practical: 2
4. **Relative Weightage:** CWS: 20-35 PRS: 20-30 MTE: 0 ETE: 0 PRE: 40-50
5. **Credits:** 2 **6. Semester:** Autumn **7. Subject Area:** PCC
8. **Pre-requisite:** Nil
9. **Objective:** The course emphasis on effective use of communication for innovation.

10. Details of the Course

S.No.	Contents	Contact hours
1.	Understanding Communication Styles: Introduction to Communication, Types of communications, Passive Communication, Aggressive Communication, Passive-Aggressive Communication, Assertive Communication	2
2.	Communicating in Writing: Using Written Communication, Pros and Cons of Written Communication, Tips for Avoiding Misunderstandings in Written Communication, The Importance of Good Conversational Skills, Active Listening, Be an Engaging Speaker	2
3.	Communications Technology: Modern Technologies, Benefits of Communications Technology, Drawbacks of Communications Technology	2
4.	Cultural Aspects of Communication: Introduction to culture, Working in a Global Community	2
5.	Disagreements and Conflicts: Nature of conflict, Avoiding Conflict, Fostering Healthy Conflict, Conflict Resolution, Negotiation, Compromise, Constructive Criticism: The Critic-Recipient Relationship, Personal Criticism, Offering Criticism, Receiving Criticism	3
6.	Design related Communication: Proof of Concept Writing, Drafting Patents and related case studies for best practice	3
Total		14

List of suggested Practical:

1. Active listening skill based exercises
2. Exercises on describing design/ innovation
3. Exercises on creating effective atmosphere for conflict resolution
4. Creative Problem solving technique exercises such as Six Thinking hats
5. Brainstorming session based exercises
6. Exercises on negotiation

11. Suggested Books:

S.No.	Name of Authors/Book/Publisher	Year of Publication / Reprint
1.	Effective Business Communication by Herta Murphy, Herbert Hildebrandt, Jane Thomas	2017
2.	Effective Communication by John Adair	2009
3.	Corporate Communication, Paul A. Argenti , Tata McGraw Hill, 6 th Edition	2013
4.	Business Communication: Connecting at Work, Hory Shankar Mukherjee, Oxford University Press,	2013

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NAME OF DEPARTMENT/CENTRE: Department of Design

1. **Subject Code:** IMN-505 **Course Title:** Business Valuation
2. **Contact Hours:** **L:** 2 **T:** 1 **P:** 0
3. **Examination Duration (Hrs.):** **Theory:** 3 **Practical:** 0
4. **Relative Weightage:** **CWS:** 20-35 **PRS:** 0 **MTE:** 20-30 **ETE:** 40-50 **PRE:** 0
5. **Credits:** 3 **6. Semester:** Autumn **7. Subject Area:** PCC
8. **Pre-requisite:** Nil
9. **Objective:** The course is designed to provide in-depth knowledge of Business Valuation.

10. Details of the Course

S.No.	Contents	Contact hours
1.	Introduction to Business Valuation Process: Concept of Value, Principles & Techniques of Valuation, Discounted Cash Flow Valuation, Relative Valuation, Contingent claim Valuation, Asset Valuation, Related concepts in Business valuation	6
2.	Discounted Cash flow Valuation.: Estimating Discount Rates, Measuring Cash Flows, Forecasting Cash Flows, Equity Discounted Cash Flow Models, Firm Valuation Models.	5
3.	Relative Valuation.: Relative Valuation: First Principles, Equity Multiples, Value Multiples.	4
4.	Loose Ends in Valuation: Cash, Cross Holdings and Other Assets, Employee Equity Options and Compensation, The Value of Intangibles, The Value of Control, The Value of Liquidity, The Value of Synergy, The Value of Transparency, The Cost of Distress.	7
5.	Contemporary Issues: Valuation of Synergy in mergers and acquisitions, valuation of companies using multiplier methods, some miscellaneous topics in valuation	6
Total		28

11. Suggested Books:

S.No.	Name of Authors/Book/Publisher	Year of Publication / Reprint
1.	Damodaran on Valuation: Security Analysis for Investment and Corporate Finance: Aswath Damodaran by Wiley.	2006
2.	Business Analysis and Valuation: Using Financial Statements, Text and Cases: Krishna G. Palepu/Paul M. Healy by Cengage	2007
3.	Investment Valuation: Tools and Techniques for Determining the Value of Any Asset: Aswath Damodaran by Wiley.	2012

4.	Financial Engineering: John F Marshall and Vipul K. Bansal by PHI New Delhi.	2009
5.	Investments : Bodie, Kane, Marcus and Mohanty by Tata McGraw Hill.	2015
6.	Business Valuation Text & Cases, Mohanty P., Taxman	2015

	Asia: Longitudinal Narratives): Mathew J. Manimala, Kishinchand Poornima Wasdani, Abhishek Vijaygopal by Springer	
3.	Innovation and Entrepreneurship: Peter F. Drucker by Harper Business	2006
4.	How to Change the World Social Entrepreneurs and the Power of New Ideas: David Bornstein by Oxford University Press	2007

INDIAN INSTITUTE OF TECHNOLOGY ROORKEE

NAME OF DEPARTMENT/CENTRE: Department of Design

1. **Subject Code:** IMN-509 **Course Title:** Legal Aspects of Business
2. **Contact Hours:** **L:** 2 **T:** 0 **P:** 0
3. **Examination Duration (Hrs.):** **Theory:** 2 **Practical:** 0
4. **Relative Weightage:** **CWS:** 20-35 **PRS:** 0 **MTE:** 20-30 **ETE:** 40-50 **PRE:** 0
5. **Credits:** 2 **6. Semester:** Autumn **7. Subject Area:** PCC
8. **Pre-requisite:** Nil
9. **Objective:** To provide knowledge of various laws related to business and also various standards needed for business.

10. Details of the Course

S.No.	Contents	Contact hours
1.	Introduction to Business Law: Introduction, Meaning and Nature of Law, Sources of Indian Law, Legal Environment of Business, Mercantile Law, Some Basic Legal Concepts, Essentials of Law.	4
2.	Law of contract –Introduction, Objectives, Definition of a Valid Contract, Offer and Acceptance, Capacity to Contract, Consent Consideration, Performance of Contracts, Discharge of Contracts, Breach of Contract and Void Agreements, Quasi Contracts, Freedom to Contract.	4
3.	Contract of Agency – Introduction, Agent and Agency, Kinds of Agencies, Classification of Agents, Duties and Rights of Agents, Principal’s Duties to the Agent and his Liability to Third Parties, Personal Liability of Agent, Termination of Agency, Power of Attorney	4
4.	Law of Partnership: Introduction, Meaning and Nature of Partnerships, Registration of Firms, Partnership Deed, Relations of Partners to One Another, Relations of Partners to Third Parties, Changes in a Firm, Dissolution	4
5.	The Company’s Act: Introduction, Formation of a Company, Memorandum of Association, Articles of Association, Prospectus, Shares, Directors, General Meetings and Proceedings, Auditor, Winding up.	4
6.	Regulation to Information- Introduction, Right to Information Act, 2005, Information Technology Act, 2000, Electronic Governance, Secure Electronic Records and Digital Signatures, Digital Signature Certificates, Cyber Regulations Appellate Tribunal, Offences, Limitations of the Information Technology Act, 2000	3
7.	Different standards - Environment Standards, ISO9000, ISO 14000, ISO22000, Good Manufacturing Practices, Good Agriculture Practice	5
Total		28

11. Suggested Books:

S.No.	Name of Authors/Book/Publisher	Year of Publication / Reprint
1.	Daniel A., Legal Aspects of Business, Oxford University Press	2015
2.	Pathak A., Legal aspects of Business, McGraw Hill	2018
3.	Gupta P., Legal Aspects of Business Concepts and Applications, Vikas Publishing	2019
4.	Kumar R., Legal Aspects of Business, Cengage	2016

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NAME OF DEPARTMENT/CENTRE: Department of Design

1. **Subject Code:** IMN-511 **Course Title:** Business Decision Making
2. **Contact Hours:** **L:** 3 **T:** 0 **P:** 0
3. **Examination Duration (Hrs.):** **Theory:** 3 **Practical:** 0
4. **Relative Weightage:** **CWS:** 20-35 **PRS:** 0 **MTE:** 20-30 **ETE:** 40-50 **PRE:** 0
5. **Credits:** 3 **6. Semester:** Autumn **7. Subject Area:** PCC
8. **Pre-requisite:** Nil
9. **Objective:** The course is designed to provide in-depth knowledge of techniques used in decision making.

10. Details of the Course

S.No.	Contents	Contact hours
1.	<p>Decision Making- Introduction, Problem Solving and Decision Making, Decision processes: Descriptive and Prescriptive orientation, Decision Making Tools and Models, Quantitative and Qualitative Methods in Practice</p> <p>Probability- Introduction, Experiments and the Sample Space, Assigning Probabilities to Experimental Outcomes, Events and Their Probabilities, Some Basic Relationships of Probability, Bayes' Theorem, Probability Distributions, Random Variables, Discrete Probability Distributions, Uniform Probability Distribution, Normal Probability Distribution</p>	6
2.	<p>Decision Analysis- Problem Formulation, Decision Making with/without Probabilities, Decision Analysis with Sample Information, Computing Branch Probabilities</p> <p>Utility-The Meaning, Utility and Decision Making, Utility: Other Considerations</p>	6
3.	<p>Forecasting Methods and Techniques- Quantitative Approaches, Components of a Time Series, Smoothing Methods, Trend Projection, Trend and Seasonal Components) Qualitative Approaches (Group Decision Techniques), Delphi Approach and Survey. Focus Group. Brain Storming/Scenario Writing, Nominal Group Think and Kiva Approach</p>	6
4.	<p>Linear Programming- Introduction, Problem Formulation, A Simple Maximization Problem, Graphical Solution Procedure, Extreme Points and the Optimal Solution, Computer Solutions, A Simple Minimization Problem</p> <p>Sensitivity Analysis- Interpretation of Solution, Introduction to Sensitivity Analysis Objective Function Coefficients, Right-Hand Sides, Graphical Sensitivity Analysis, Computer Solution, Simultaneous Changes</p>	8
5.	<p>Applications of LP- Marketing and Financial Applications, Operations Management Applications, Distribution and Network Models, Transportation Problem, Assignment Problem, Production and Inventory Application</p>	5
6.	<p>Integer Programming- Types & Models, Graphical and Computer Solutions for an</p>	5

	All-Integer Linear Program, Applications.	
7.	Simulation- Simulation Modeling & Applications, Advantages and Disadvantages of Using Simulation	3
8.	Project Scheduling: PERT/CPM Project Scheduling with Known Activity Times (project management techniques) Considering Time-Cost Trade-Offs	3
Total		42

11. Suggested Books:

S.No.	Name of Authors/Book/Publisher	Year of Publication / Reprint
1.	Quantitative Methods for Business by Anderson, Sweeney, Williams, Camm, Martin. South-Western Cengage Learning.	2010
2.	Introduction to Operations Research by F S Hillier, G J Lieberman B Nag and P Base , 10 th Edition, McGraw Hill.	2017
3.	Operations Research: An Introduction by H A Taha 9 th Edition Pearson	2014
4.	Statistics for Management by RI Levin, David Rubin, M.H.Siddiqui and Sanjay Rastogi 8 th Edition, Pearson	2017

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NAME OF DEPARTMENT/CENTRE: Department of Design

1. **Subject Code:** IMN-513 **Course Title:** Contemporary Management Practices
2. **Contact Hours:** **L:** 2 **T:** 0 **P:** 0
3. **Examination Duration (Hrs.):** **Theory:** 2 **Practical:** 0
4. **Relative Weightage:** **CWS:** 20-35 **PRS:** 0 **MTE:** 20-30 **ETE:** 40-50 **PRE:** 0
5. **Credits:** 2 **6. Semester:** Autumn **7. Subject Area:** PCC
8. **Pre-requisite:** Nil
9. **Objective:** The course is designed to familiarize the students with basic management concepts and behavioral processes in the organization.

10. Details of the Course

S.No.	Contents	Contact hours
1.	Concepts of Management: Nature, Meaning, and Significance of Management, Managerial functions, Principles of Management, Managers V/s Entrepreneurs- Managers V/s Leaders- Guidelines for Managerial Excellence and success. Evolution of Management Thoughts-Traditional, Behavioral, Systems, Contingency and Quality viewpoints.	5
2.	Planning: Nature & Elements of Planning, Planning types and Models, Planning in learning organizations; Strategic Planning-an overview; Management by Objectives (MBO), SWOT Analysis	4
3.	Organizing and Staffing: Nature of Organizing, Basic issues in organizing- Work Specialization, chain of command Delegation, Staffing Decisions- Authority and Responsibility Relationships, Decision Making Process, Models of Decision Making.	4
4.	Directing and Controlling: Nature of Evaluation Design and Problems- Appraising Techniques- Developing Compensation Plans, Direction, Co-ordination, Quantitative and Qualitative measures of Control, Feed-back Management. System and Process of Controlling, Control techniques and information technology.	4
5.	Fortune at Bottom of Pyramid : Issues for entrepreneurial opportunities of BoP	3
6.	Ethical Issues in Management: Corporate Social Responsibility of Business, Corporate Governance	4
7.	New Trends in Management: case studies on latest management practices	4
Total		28

11. Suggested Books:

S.No.	Name of Authors/Book/Publisher	Year of Publication / Reprint
1.	Essentials of Management by Harold Koontz, Cyril O'Donnell. McGraw Hill.	1974
2.	Essentials of Management: An International and Leadership Perspective by Harold Koontz, Heinz Weihrich, McGraw Hill	2008
3.	The Process of Management: Strategy, Action, Results by William H. Newman, E. Kirby Warren & Andrew R. McGill. Prentice Hall International	1987
4.	Pralhad, C.K., "Fortune at the Bottom of the Pyramid: Eradicating Poverty Through Profits", Pearson	2013
5.	Udai Parek. & Sushama Khanna, Understanding Organizational Behavior, Oxford University Press 4 th Edition	2018