

COURSE SCHEME
EXAMINATION SCHEME
ABSORPTION SCHEME
&
SYLLABUS

Of

First, Second, Third & Fourth Semester
Choice Base Credit System (CBCS)

Of

Master of Technology (M.Tech)

In

Industrial Design

Of

RASHTRASANT TUKDOJI MAHARAJ
NAGPUR UNIVERSITY, NAGPUR

Rashtrasant Tukdoji Maharaj Nagpur University, Nagpur
Faculty of Engineering & Technology
Board of Studies - Architecture
Course and Examination Scheme of Master of Design
Choice Base Credit System (CBCS)

I Semester M. Des. (Industrial Design)

Subject Code	Subject	Teaching Scheme			Examination Scheme									
					Theory					Practical/Viva Voce				
		Hours per week			No. of Credits	Duration of Paper (Hrs.)	Max. Marks	Max. Marks	Total Marks	Min. Passing Marks	Max. Marks	Max. Marks	Total Marks	Min. Passing Marks
		L	P	S			University Assessment	College Assessment			University Assessment	College Assessment		
PGID101T	History of Design	3	-		3	3	70	30	100	50	-	-	-	-
PGID102T	Materials and Processes	3	-		3	3	70	30	100	50	-	-	-	-
PGID103T	Craft, Creativity and Postmodernism	3	-		3	3	70	30	100	50	-	-	-	-
PGID104P	Elective –I (Discipline Specific)	1	-	3	4						50	50	100	50
PGOPEN105T	Elective –II (Open)	4	-		4	3	70	30	100	50	-	-	-	-
PGID106P	Studies in Form - I	1		3	4	-	-	-	-	-	50	50	100	50
PGID107P	Design - I	-		6	6	-	-	-	-	-	100	100	200	100
Total		15	0	12		-	280	120	400	-	200	200	400	-
Semester Total		27			27	800 Marks								

Elective I -1. Elements of Design 2. Workshop Practice 3.Design and Technology
Open electives are listed separately.

Rashtrasant Tukdoji Maharaj Nagpur University, Nagpur Faculty of Engineering & Technology
Board of Studies - Architecture Course and Examination Scheme of Master of Design Choice Base Credit System(CBCS)II Semester M. Des.
(Industrial Design)

Subject Code	Subject	Teaching Scheme			Examination Scheme									
		Hours per week			No. of Credits	Duration of Paper (Hrs.)	Theory				Practical/Viva Voce			
							Max. Marks	Max. Marks	Total Marks	Min. Passing Marks	Max. Marks	Max. Marks	Total Marks	Min. Passing Marks
		L	P	S	University Assessment	College Assessment	University Assessment	College Assessment						
PGID201T	Product Development	3	-		3	70	30	100	50	-	-	-	-	
PGID202T	Product Planning and Marketing	3	-		3	70	30	100	50	-	-	-	-	
PGID203T	Human Factor Design	3	-		3	70	30	100	50	-	-	-	-	
PGID204P	Elective –III (Discipline)	1	-	3	4					50	50	100	50	
PGFD205T	Foundation Course -I*	4	-		4	70	30	100	50	-	-	-	-	
PGID206P	Studies in Form - II	1		3	4	-	-	-	-	50	50	100	50	
PGID207P	Design - II	-		6	6	-	-	-	-	100	100	200	100	
Total		15	0	12		280	120	400	-	200	200	400		
Semester Total		27			27	800 Marks								

Elective III- 1.Presentation techniques 2. Web Design 3. Game Design

*Foundation Course I- Research Methodology for Architecture and Design - To be conducted by teacher having PhD qualification.

Rashtrasant Tukdoji Maharaj Nagpur University, Nagpur
Faculty of Engineering & Technology
Board of Studies - Architecture
Course and Examination Scheme of Master of Design
Choice Base Credit System (CBCS)

III Semester M. Des. (Industrial Design)

Subject Code	Subject	Teaching Scheme				Examination Scheme								
		Hours per week			No. of Credits	Duration of Paper (Hrs.)	Theory				Practical/Viva Voce			
		L	P	S			Max. Marks	Max. Marks	Total Marks	Min. Passing Marks	Max. Marks	Max. Marks	Total Marks	Min. Passing Marks
PGOPEN301T	Elective – IV (Open)	4	-		4	3	70	30	100	50	-	-	-	-
PGFD302T	Foundation Course -II	4	-		4	-	-	-	-	-	50	50	100	50
PGID303P	CAD Modeling and Digital Design	1		3	4						50	50	100	50
PGID304P	Seminar	1	-	3	4	-	-	-	-	-	50	50	100	50
PGID305P	Design - III			8	8						100	100	200	100
Total		10	-	14	24	-	70	30	100	-	250	250	500	-
Semester Total		24			24	600 Marks								

Foundation Course II- Architectural Project Planning & Management

Rashtrasant Tukdoji Maharaj Nagpur University, Nagpur
Faculty of Engineering & Technology
Board of Studies - Architecture
Course and Examination Scheme of Master of Design
Choice Base Credit System(CBCS)

IV Semester M. Des. (Industrial Design)

Subject Code	Subject	Teaching Scheme			Examination Scheme										
		Hours per week			No. of Credits	Duration of Paper (Hrs.)	Theory				Practical/Viva Voce				
		L	P	S			Max. Marks	Max. Marks	Total Marks	Min. Passing Marks	Max. Marks	Max. Marks	Total Marks	Min. Passing Marks	
			University Assessment	College Assessment	University Assessment	College Assessment									
PGID401P	Professional Training*				2							50	-	50	25
PGID402P	Colloquium	1		3	4								50	50	25
PGID403P	Dissertation	Student is expected to work in Industry on a live project			12	-	-	-	-	-	-	100	200	300	150
Total		1	-	3		-	-	-	-	-	-	150	250	400	-
Semester Total		4			18	400 Marks									

* The IV semester will start with Professional Experience of duration 8 Weeks.

Rashtrasant Tukdoji Maharaj Nagpur University, Nagpur
Faculty of Engineering & Technology
Board of Studies - Architecture
Absorption Scheme of Master of Design
Choice Base Credit System (CBCS)

I Semester M. Des. (Industrial Design)

OLD PATTERN		CBCS SYSTEM	
SUBJECT CODE	NAME OF SUBJECT	SUBJECT CODE	NAME OF SUBJECT
1-D-1	Oreintation - I	PGID104P	Elective –I (Elements of Design/Workshop practices)
1-D-2	Oreintation - II	PGID204P	Elective –III (Presentation Techniques)
1-D-3	Design - I	PGID107P	Design - I
1-D-4	History of Design	PGID101T	History of Design
1-D-5	Studies in form - I	PGID106P	Studies in Form - I
1-D-6	Material and process	PGID102T	Materials and Processes

Rashtrasant Tukdoji Maharaj Nagpur University, Nagpur
Faculty of Engineering & Technology
Board of Studies - Architecture
Absorption Scheme of Master of Design
Choice Base Credit System (CBCS)

II Semester M. Des. (Industrial Design)

OLD PATTERN		CBCS SYSTEM	
SUBJECT CODE	NAME OF SUBJECT	SUBJECT CODE	NAME OF SUBJECT
2-D-1	Product development	PGID201T	Product Development
2-D-2	CAD - 3D Modeling	PGID303P	CAD Modeling and Digital Design
2-D-3	Design - II	PGID207P	Design - II
2-D-4	Human Factor Design	PGID203T	Human Factor Design
2-D-5	Studies in form - II	PGID206P	Studies in Form - II
2-D-6	Seminar	PGID304P	Seminar

Rashtrasant Tukdoji Maharaj Nagpur University, Nagpur
Faculty of Engineering & Technology
Board of Studies - Architecture
Absorption Scheme of Master of Design
Choice Base Credit System (CBCS)

III Semester M. Des. (Industrial Design)

OLD PATTERN		CBCS SYSTEM	
SUBJECT CODE	NAME OF SUBJECT	SUBJECT CODE	NAME OF SUBJECT
3-D-1	Digital design	PGID303P	CAD Modeling and Digital Design
3-D-2	Product planning and marketing	PGID202T	Product Planning and Marketing
3-D-3	Design - III	PGID305P	Design - III
3-D-4	Elective	PGID304P	Seminar
3-D-5	Advanced Studies in form	PGID206P	Studies in Form - II
3-D-6	Training	PGID401P	Professional Training

Rashtrasant Tukdoji Maharaj Nagpur University, Nagpur
Faculty of Engineering & Technology
Board of Studies - Architecture
Absorption Scheme of Master of Design
Choice Base Credit System (CBCS)

IV Semester M. Des. (Industrial Design)

OLD PATTERN		CBCS SYSTEM	
SUBJECT CODE	NAME OF SUBJECT	SUBJECT CODE	NAME OF SUBJECT
4-D-1	Project	PGID403P	Dissertation
4-D-2	Design review	PGID402P	Colloquium

Rashtrasant Tukdoji Maharaj Nagpur University, Nagpur
Faculty of Engineering & Technology
Board of Studies, Architecture
Syllabus of Master of Design (Industrial Design)
Choice Base Credit System (CBCS)

SEMESTER – I

PGID101T History of Design

Objective:

To make the students aware about evolution of design as faculty, arts and crafts movement and influence of urbanization on product design.

On completion of the course the student will be able to:

- Know the history of design profession in Europe and America
- Understand about various isms, trends and styles
- Study the design philosophy of pioneers of design
- Know Indian scenario in product design and effect of urbanization and technology on product design

UNIT I: Concept & design starting from decoration to the giant exhibition leading to the Bauhaus, works of Bauhaus, history of design profession in Europe & America. Influence on design of various episodes like, war, politics, technology, etc.

UNIT II: Isms, style, trend and society and their examples.

UNIT III: Pioneers of design, their philosophy and study of famous products.

UNIT IV: History of design in Indian society, case studies of traditional evolved Indian products, system etc. their roots and associations.

UNIT V: Influences of urbanization, technology etc. at global and national level.

Texts/References

Armitage, W.H. A Social History of Technology, Faber & Faber.

Bronowski, J. the Ascent of Man, BBC Publication.

Derry, T.K. and Williams, T.I. A Short History of Technology, oxford University Press.

PGID102T Materials and Processes

Objective:

To expose the students to the material aspects of product design, application based selection of materials and material processing techniques.

On completion of the course the student will be able to:

- Understand the behavior of various metals and non-metals
- Learn about the selection of material for different applications
- Gain knowledge about various natural materials and their use at industrial level
- Get exposure to the various manufacturing processes

UNIT I: Metals forms (ferrous & non ferrous), constitution & character of alloys like Aluminum, Copper, Brass, Benin, Titanium, Zinc, Magnesium, Zinc, etc. Properties of materials like malleability, ductility, hardness, toughness, strength, elasticity, plasticity. Processes like hardening, tempering, annealing, etc on metals.

UNIT II: Plastics, thermoplastics, selector & pure of plastic for energy & corn products composition & basic constitution of acrylic, phenolic, polypropylene, epoxy, nylon polyester, DVC, cellulose acetate, polyethylene, polymethane etc.

UNIT III: Design factors for process issues like filter, reinforcement, corners, tapes, holes, expansions, finishing etc.

UNIT IV: Woods & natural materials like bamboo, cane, leather, cloth, jute, paper and their use at industrial level.

UNIT V: Process like vacuum forming, hardening, die casting, design factors for processing SMC, DMC, properties & uses of rubber, ceramic, glass, concept of strucers casting.

Texts/References

Beadle J.D., Plastic Forming, Production Engineering Series, Macmillan, London, 1971.

Beadle J.D., Metal Forming, Production Engineering Series, Macmillan, London, 1971.

Beadle J.D., Product treatment & finishes, Macmillan, London, 1971.

PGID103T Craft, Creativity and Postmodernism

Objective:

To highlight the importance of craft and creativity for new product development and explore the post modern interpretation of craft design

On completion of the course the student will be able to:

- Understand craft as expression of Indian tradition and means to explore materials
- Gain knowledge about various creative processes in crafts
- Know about post modern interpretation and contemporary trends in craft
- Understand current design practices in craft design

UNIT I: Craft as an expression of Indian tradition, cultural roots in Craft, creative processes in craft.

UNIT II: Craft as a means to explore materials, processes and forms. Natural materials like bamboo, wood, cane, leather, cloth, jute, paper and their uses in craft.

UNIT III: Post modern interpretation of craft, contemporary trends in craft and creativity.

UNIT IV: Significance of craft as a creative base for current design practices

UNIT V: Creative exploration in craft design to suit urban and export markets.

Text/ References

- 1) John Thackara (Ed), Design After Modernism (Beyond the Object), 1989
 - 2) Victor Margolin (Ed), Design Discourse (History, Theory, Criticism), The University of Chicago Press, 1989
 - 3) Powell, Jim; Postmodernism for beginners, Orient Longman, India, 1998
 - 4) Jencks, Charles; Post-Modernism: A New Classicism in Art and Architecture, Academy Editions, London, 1987
 - 5) McKim, Robert; Experiences in Visual Thinking, Publisher: Brooks/Cole Publishing Company, 1980
-

PGID104P Elective – I (Discipline Specific)

i) Elements of Design

Objective:

To introduce the students to basic visual design concept and its relationship with the society along with design elements interpreted in terms of 2D and 3D compositions

On completion of the course the student will be able to:

- Understand the principles of design
- To know about various elements of design
- To understand 2D and 3D compositions

UNIT I: Introduction to the concept of design, its relevance in society, value of design and composition, principles of design.

UNIT II: Studies of basic elements and concept of elements of visual design: line, texture, color, form, balance, proportion, size, shape, mass, unity and variety.

UNIT III: Spatial relationship and compositions in 2 and 3 dimensional space, 2 dimensional radii manipulation and form transition.

UNIT IV: 2-d and 3-d exercises in graphic composition and layout.

UNIT V: Use of grids in graphic composition.

Texts/References

R.G.Scott, Design fundamentals, McGraw-Hill, New York, 1951.

E.A.Harwitz, Design, a Search for Essential, International Textbook Co., Scranton, 1967.

J.Karo, Graphic Design Problems, Methods, Solution, (VNR), New York, 1975.

R.A.Ballinger, Layout and Graphic Design, (VN), 1970.

ii) Workshop Practice

Objective:

To gain knowledge about basic mechanical equipments, their potentials and workshop facilities and it's interlinking.

On completion of the course the student will be able to:

- Understand various carpentry and metal works
- Gain experience of hands on jobs based on different equipments
- Know the fabrication processes

UNIT I: Carpentry joints, wood process, etc.

UNIT II: Understanding hands on jobs focused on specific equipments like drilling, lathe, Milling, threading, tapping, grinding, etc.

UNIT III: Making small jobs of metals.

UNIT IV: Understanding process of fabrication like roll forming, stamping, forging, annealing, drawing, deep draw, spinning, extruding, sintering by site visits.

UNIT V: Practicals on threading, turning, routing, lapping, sandcasting, ceramics, plaster, clay.

Texts/References

Begeman M.L., Manufacturing Processes, 8th ed. John Wiley, New York, 1987.

Champan W.A.J.,Workshop Technology Vol. I, II, III, Oxford/IBH Pub., New Delhi 1975.

iii) Design & Technology

Objective:

To gain knowledge about basic mechanical elements and units and terminology of technical parameters involved in the process of product design.

On completion of the course the student will be able to:

- Understand the basic functioning of motors and engines
- Define various technical parameters
- Define various forms of energy and their parameters
- Gain basic knowledge about gears and various control governors

UNIT I: Electric motors and its functioning, bionic motors, thermocouples, turbines, internal combustion engines, springs, and propulsion.

UNIT II: Parameters like acceleration force, shocks, vibration, pressure, thermodynamics with units

UNIT III: Defining wind energy, solar energy, gravity, weight and measurements.

UNIT IV: Understanding gears, type of gears like spin gear, helical worm, bevel belts, flat, v-belts, timing, chains, flexible shaft, flexible couplings, universal points, toggle joints, pulleys, shear sand cams, etc.

UNIT V: Controls-governors, clutches, brakes, flywheel, pendulums, ratchets, rudders, valves, damper, relays, servo motors, bearings switches.

Sheets and plates on the above mentioned elements.

References

Manufacturing Technology vol. 29

Nievel, B.W. and Drayer, A.B. (1975) Production, Design and Process Engineering, Mc Graw-Hill.

School Council (1974) Material and Design Edward Arnold.

PGOPEN105T Elective – II (Open)

PGID106P Studies in Form – I

Objective:

To explore and study 2D and 3D forms to develop visual awareness, imagination and creative insight

On completion of the course the student will be able to:

- Know elements of form in the context of product design
- Understand 2 and 3 dimensional form transition
- Gain knowledge about use of colour as element of design and colour dynamics
- To establish the relationship between form and colour

UNIT I: Study of elements of form to develop visual awareness, imagination and creative insight.

UNIT II: Form elements in the context of product design, 2 & 3 dimensional radii manipulation; joints, grooves and openings, 2 & 3 dimensional form transition, creative form synthesis.

UNIT III: Introduction to color and color as elements of design, Color classification and dimensions of color; hue, value and chrome relationships

UNIT IV: Color dynamics and interaction of colors, color meaning and traditions, psychological use of colors, color in nature.

UNIT V: Color & form relationships.

Texts/References

Itten J., Elements of Color, VNR, New York, 1970.

Sloane patricia, Color: Basic Principles & New Directions, Studio Vista, London 1963.

PGID107P Design - I

Objective:

To gain knowledge about contextual study in product design to generate design brief and interpreting data and formulating conclusion helpful in the initiation of the process of product design.

On completion of the course the student will be able to:

- Understand various factors which are having impact on product design
- Generate design brief
- Know various techniques to study user behavior and reactions
- Document and interpret data obtained
- Carry out analytical studies in other creative fields.

Shall primarily comprise of 2 small projects and one large project. 'Simple objects', hand held, craft base and for SS industries.

UNIT I: Comprehending the factors that directly or indirectly have the impact on the context and the objects, systems and the products.

UNIT II: Group assignments on assessing relevance of available products with respect to the framework of their existence, analyzing evolved objects, product rapport, cost optimization, image, value, exclusive products.

UNIT III: Understanding of problem areas and limitations generating design brief familiarization studies and programming for detailed investigation of context.

UNIT IV: Developing questionnaires, interviewing users and selecting suitable techniques to study user behavior and reactions, interviewing and observing user and photographic studies of products in use, understanding of market demands and manufacturing constraints.

UNIT V: Documenting and interpreting data and formulating conclusions, role of creativity in understanding of latest needs, comparative analytical studies in other creative fields.

Texts/References

Asimov Monis, Introduction to Design, Prentice Hall, Englewood Cliffs, N.J.,1962.

Jones J.C., Design Methods: Seeds of Human Futures, Wiley Inter-science, London, 1970.

Gasson, P.C. Theory of Design, Anchor Press.

SEMESTER – II

PGID201T Product Development

Objective:

To introduce the students to basic parameters of product development and creative methodology with focus on the front end processes.

On completion of this course the students will be able to:

- Demonstrate an understanding of the overview of all the product development processes
- Gain knowledge about market research and related aspects
- Know about life cycle assessment
- Gain knowledge of concept generation, testing, pilot production and related aspects

UNIT I: Process of design, methodology, identifying problem area, divergent, lateral thinking, sources of information, convergent thinking, imposition of controlling factors, specifications, models, sketches, concepts, strengths, consolidation of workable solutions.

UNIT II: Society and products, market research, understanding market pressure, policies, ecology concerns, economic climate, raw material availability.

UNIT III: Life cycle assessment for feasibility, marketability, manufacturing, reliability, maintenance, safety, operations, etc.

UNIT IV: Process of product development, investigation in identifying the product to be designed, generating problem statement, formulating design brief, design specification, sales specification, performance, material and system specification.

UNIT V: Concept development, product engineering, assembly drawing, evaluation, product testing, re-engineering, re-detailing, pilot production, vendor development.

Texts/References

Rader, Melvin, Ed, A Modern Book of esthetics, Holt Rinehart & Winston, New York, 1973

Nievel, B.W, and Dray Production, Design and Process Engineering, Mc Graw-Hill

Stone, m Product Planning-An Integrated Approach, Mcmillan.

PGID202T Product Planning and Marketing

Objective:

To introduce the students to corporate world and basic concepts of product planning and various marketing strategies involved in the process of product planning and brand developing

On completion of this course the students will be able to:

- Understand corporate and management strategy for product planning
- Assess company's finance performance, SWOT analysis, etc.
- Understand strategies for introducing and placing new products
- See product design as a part of a scheme to develop brand image
-

UNIT I: Corporate strategy for product planning, management thinking on new products, seeing products as part of the image of the company, moving into future, defining companies business.

UNIT II: Technology transfer problems, SWOT Analysis (analysis of strength, weakness, opportunities and threat). Brief Introduction to assessing of company's financial performance, Study of Product life cycle, monitoring of sale and competition, when to introduce new products.

UNIT III: Assessing market potentials for new products, market research, consumer research and its demographic aspects, setting up a questionnaire for these aspects, establishing market segments and their dimensions, assessing competitions marketing approach and strategies.

UNIT IV: Developing a strategy to introduce new products using market gaps as competitive edge, cost considerations and profitability of new products, developing a product plan and product mix, price policy, positioning the company, product positioning, planning for future position.

UNIT V: Evolving a design brief by inter-linking with market/product plan, develop brand image, house style, marketing strategy and corporate image, discriminating product range from each other and form competitor's range. Developing product specifications for different products within the range. Market communication, launching the product, monitoring the market performance.

Texts/References

Kotler Philips, Marketing management, 5th ed., prentice Hall, New Delhi, 1984.

Agrawall, Product Planning, Seminars on Product Planning held in IDC, IIT Bombay 1982.

Levitt Theodore, Marketing Imagination, Free Press, New York, 1986.

PGID203T

Human Factor Design

Objective:

To expose the students to the various aspects of Industrial Design so as to develop new products considering ergonomics, cognitive response and other human factors.

On completion of the course, the students will be able to:

- Understand the importance of ergonomics in the design of new products
- Learn the effect of anthropometry, physiology, biomechanics, etc. on the design and development of new products
- Understand the effects of other human factors
- Gain knowledge about controls and display elements

UNIT I: Human being in manmade world, gross human anatomy, static and dynamic anthropometry, muscles and work physiology, biomechanics, environmental condition.

UNIT II: Function of control and display elements, dials, knobs, push buttons, handles and electronic displays.

UNIT III: Investigations and study of visual, functional and ergonomical requirements of control and display elements, legibility of display elements, character of different typefaces and their readability.

UNIT IV: Printing and transfer techniques, product graphics, study of different textures and patterns, area, volume and proportion, order and system.

UNIT V: Individually planned design projects involving research, analysis and design of control and display panels.

Texts/References

W.E. Woodson, Human Engineering Guide for equipment Designers, University of California, Uerkley, 1000.

Henry Dreyfuss, Measure of Man, Whitney N.Y.,1960

Crosby, Fletchers & Forbes, A Sign Systems Manual, Studio Vista, London, 1970

W.H. Mayall, Machines & Perception in Industrial Design, Studio Vista, N.Y., 1968.

PGID204P Elective – III (Discipline)

i) Presentation Techniques

Objective:

To introduce the students to various presentation techniques like sketching, drawing human body parts, modeling involved in the process of product design

On completion of the course the student will be able to:

- Work on pencil drawing, object drawing and model making
- Understand the use of colours in design
- Know about perspective drawing
- Gain knowledge about basic photography

UNIT I: Techniques of pencil drawing through elementary exercises to coordinate eye, hand and body movements to acquire necessary control over the line drawing, introduction to object drawing.

UNIT II: Introduction to the use of color, color scale, drawing human elements, understanding of curves, edges and corners and their presentation.

UNIT III: Theory of perspective, one point and two point perspective

UNIT IV: Basic Photography. Understanding SLR Camera, B/W printing, Slide process, Digital Photography.

UNIT V: Making of scaled model of designed objects to match its properties.

Texts/References

Dobin Jay, New System for Designers, Whitney, N.Y., 1956.

Begeman M.L., Manufacturing Processes, 8th ed. John Wiley, New York, 1987.

Champman W.A.J., Workshop Technology Vol. I, II, III, Oxford/IBH Pub., New Delhi 1975.

ii) Web Design

Objective:

To give the students understanding of the basic web concepts and fundamentals of web design for static dynamic and active web pages.

At the end of the semester, the students will be able to:

- To know the Basic web concept and Internet protocols
- To learn about the XHTML Forms, Frames and Tables
- To learn about CSS.
- To Study about the DHTML, CGI, ASP, JSP, Java servlets
- To Study about Java applets, Java Beans

UNIT I: introduction to HTML and XHTML basics, LIST, unordered list, nested and ordered list, basic HTML tables, intermediate HTML table and formatting, basic HTMLf and formatting, more complex HTML forms, frameset element, nested frameset, style sheets and graphics: introduction to style sheets, formatting text by using style sheets, formatting paragraphs by using style sheets

UNIT II: Graphics in web design, selecting a graphics format, preparing graphics for web use, inserting graphics, arranging elements on the page, controlling image size and padding, hyper linking from graphics, utilizing thumbnail graphics, including alternate text for graphics.

UNIT III: Tables & layouts, navigation: creating navigational aids, creating tables formatting tables layouts: creating division, based layouts, creating user forms, using frames for layout, incorporating audio and video dynamic HTML

UNIT IV: Dynamic web pages, need, tiers, concept of a tier, comparison of Microsoft and Java technologies, web pages, static web pages, plug-ins, frame, forms, magic of dynamic web pages, overview of dynamic web page technologies, overview of DHTML, Common Gateway Interface, ASP, ASP Technology, ASP Example, modern trends in ASP, Java and JVM, Java Servlets, Java Server Pages.

UNIT V: Active web pages, Java applets, lifecycle of Java applets, ActiveX controls, Java beans.

Texts/References

Faithe Wempfen, "Microsoft Step by Step – HTML and XH", Prentice Hall of India Private Limited, New Delhi, 2011.

Achyut S Godbole & Atul Kahate, "WEB TECHNOLOGIES TCP/IP to Internet Applications Architectures", TMH 2007.

Thomas A. Powell, McGraw-Hill "HTML & CSS: The Complete Reference", Fifth Edition (Complete Reference Series) Osborne Media; 5 edition, 2010.

iii) Game Design

Objective:

To develop strategic thinking and problem solving approach in game design and enhance creativity in game design

At the end of the semester, the students will be able to:

- Understand game design process
- Gain knowledge about game design as against other design areas
- Understand ability to learn as criteria for game design
- Design game hardware and board game and their testing

UNIT I: Definition of games, differences between toys, puzzles and games, classification of games, learning through games, educational games with focus on fun and education, game design process, iterative cycles in game design process.

UNIT II: Use of luck and development of strategic thinking and problem solving in game design, concepts of play value and game play.

UNIT III: Players' involvement in design process, feedback as a source of creativity in game design, differences between game design and other design areas.

UNIT IV: Age specificity of games, learnability as a criteria for game design, games as a social process, studying and developing player interactions.

UNIT V: Designing conventional game hardware and board games, paper prototyping and testing, play testing of games for feedback, market for board games in India.

The elective expects developing and play-testing an original game.

Texts/References

Berlin, Eric : Amazing family game board book : includes • authentic game pieces, Pub: Innovative kids, 2005

PGFD205T

Foundation Course – I

PGID207P**Design - II****Objective:**

To initiate the process of creative thinking through use of various techniques so as to plan design projects

On completion of the course the student will be able to:

- Know the importance of creative thinking
- Understand product properties
- Understanding aspirations of users
- Know about stages involved in design process

The emphasis of the course is on individually planned design projects in different product areas, selection of projects by students based on consideration like close human interaction with product, wide range or requirements of different users and possibilities of formal and structural innovations. Projects end with a comprehensive presentation through working/mock-up models, design drawing and a report

UNIT I: Theoretical information and short supporting assignment on following topics: Role of creativity in problem solving, study of inhibitions, conformity and vertical thinking.

UNIT II: Assignments on using techniques like brain storming, synectics to develop creative attitude and open mind, the development of modern design methods from craft evolution.

UNIT III: Detailed discussion on stages in design process, complimentary nature of systematic and creative thinking in various stages of design process, discussion on nature of synthesis.

UNIT IV: Methodology for visual analysis of products, principles of value analysis, use, esteem, time and exchange values and definition of function.

Texts/References

Jones J.C, Design Methods, Seed of Human Futures, Wiley Inter-science, London, 1970

Buhi H.R., Creative Engineering Design, Iowa State Univ. Press, Iowa, 1960

Hill P.H., This Science of Engineering Design, Holt, Rinebart and Sinston, N.Y., 1970

De Bono Edward, Lateral Thinking, Penguin (UK), 1972,

Gordon W.J.J., Synectics, Harper & Row, N.Y., 1968

SEMESTER – III

PGOPEN301T

Elective – IV (Open)

PGID304P**Seminar**

The students are required to carry out research in any area related to project to be carried out in 4th semester. Areas which would encourage diverse research inclinations should be identified, inputs about structuring design briefs, establishing subject matter, generating keywords and key statements. Students are expected to carry out book, magazine, journal study, meet and interview people and experts. In diverse areas external resource persons can be consulted. Students shall submit a paper of minimum 1000 words supporting his issues and study area with other presentation tools like models, drawings, animation with all bibliography references and quotes. The student shall be evaluated on the ability to carry out research, analysis, synthesis and exploration.

PGID305P**Design - III****Objective:**

To make the students aware about the significance of brand identity and corporate image for a product design company and incorporating the same in the products designed by them.

On completion of the course the student will be able to:

- Understand the importance of brand identity and corporate image
- Know the role of designer as a leader
- To know the various methods of product analysis and pilot production

UNIT I: Design in the context of industry, corporate image, brand name

UNIT II: Understanding the role of designer as a leader / interventionist in a group of managers and technocrats

UNIT III: Product analysis, market research, ergonomics studies

UNIT IV: Value engineering, block modeling, technical analysis, operational analysis

UNIT V: Pilot production.

SEMESTER – IV

PGID401P Professional Training

The Students at the end of 3rd Semester are required to undergo a 8 weeks industrial training at an industry in the Design department to have an in-house experience of manufacturing/design drawings etc.

PGID402P Colloquium

The Colloquium will involve meetings and discussions of project research work presented by the students, by researchers from faculty of industrial design, from other departments and from other universities. The presentations will reflect contemporary research in product design and related fields.

PGID403P Dissertation

Student has to identify an industry / organization who would allow him to work on their project sponsored by the industry / organization. He is expected to carry the project up to completion as a prototype or productionized product. A guide with experience in the particular product area would have to be chosen by the student. The student is required to submit progress reports of his project to the department endorsed by the guide. The evaluation of the final project will be through assessment by the guide and a final jury on his successful completion of the project.
