University of Mumbai

No. AAMS_UGS/ICC/2023-24/71

Sub: B. Des. (Design) (Sem – III & IV) (CBCS).

CIRCULAR:-

Attention of the Principals of the Affiliated Colleges and Directors of the Recognized Institutions in Faculty of Science & Technology is invited to this office Circular No. AAMS_UGS/ICC/2023-24/08 dated 09th June, 2023 relating to the B. Des. (Design).

They are hereby informed that the recommendations made by the Board of Deans at its meeting held on 27th October, 2023 **vide** item No. 6.15 (N) have been accepted by the Academic Council at its meeting held on 01st November, 2023 **vide** item No. 6.15 (N) and that in accordance therewith, syllabus of **B. Des. (Design) (Sem – III & IV) (CBCS)** is introduced and the same has been brought into force with effect from the academic year 2023-24.

(The said circular is available on the University's website www.mu.ac.in).

(Prof. Sunil Bhirud)
I/c. REGISTRAR

MUMBAI – 400 032
~~24th November~~, 2023
12th December,

To

The Principals of the Affiliated Colleges and Directors of the Recognized Institutions in Faculty of Science & Technology.

A.C/6.15(N) /01/11/2023

Copy forwarded with Compliments for information to:-

1) The Chairman, Board of Deans,
2) The Dean, Faculty of Science & Technology,
3) The Chairman, Board of Studies,
4) The Director, Board of Examinations and Evaluation,
5) The Director, Department of Students Development,
6) The Director, Department of Information & Communication Technology,
7) The Director, Institute of Distance and Open Learning (IDOL Admin), Vidyanagari,
8) The Co-ordinator, MKCL.

Copy for information and necessary action :-

1. **The Deputy Registrar, College Affiliations & Development Department (CAD),**
2. **College Teachers Approval Unit (CTA),**
3. **The Deputy Registrar, (Admissions, Enrolment, Eligibility and Migration Department (AEM),**
4. **The Deputy Registrar, Academic Appointments & Quality Assurance (AAQA)**
5. **The Deputy Registrar, Research Administration & Promotion Cell (RAPC),**
6. **The Deputy Registrar, Executive Authorities Section (EA)**
   He is requested to treat this as action taken report on the concerned resolution adopted by the Academic Council referred to the above circular.
7. **The Deputy Registrar, PRO, Fort, (Publication Section),**
8. **The Deputy Registrar, Special Cell,**
9. **The Deputy Registrar, Fort Administration Department (FAD) Record Section,**
10. **The Deputy Registrar, Vidyanagari Administration Department (VAD),**

Copy for information :-

1. **The Director, Dept. of Information and Communication Technology (DICT), Vidyanagari,**
   He is requested to upload the Circular University Website
2. **The Director of Department of Student Development (DSD),**
3. **The Director, Institute of Distance and Open Learning (IDOL Admin), Vidyanagari,**
4. **All Deputy Registrar, Examination House,**
5. **The Deputy Registrars, Finance & Accounts Section,**
6. **The Assistant Registrar, Administrative sub-Campus Thane,**
7. **The Assistant Registrar, School of Engg. & Applied Sciences, Kalyan,**
8. **The Assistant Registrar, Ratnagiri sub-centre, Ratnagiri,**
9. **P.A to Hon'ble Vice-Chancellor,**
10. **P.A to Pro-Vice-Chancellor,**
11. **P.A to Registrar,**
12. **P.A to All Deans of all Faculties,**
13. **P.A to Finance & Account Officers, (F & A.O),**
14. **P.A to Director, Board of Examinations and Evaluation,**
15. **P.A to Director, Innovation, Incubation and Linkages,**
16. **P.A to Director, Department of Lifelong Learning and Extension (DLLE),**
17. **The Receptionist,**
18. **The Telephone Operator,**

Copy with compliments for information to :-

19. **The Secretary, MUASA**
20. **The Secretary, BUCTU.**

AC – 01/11/2023
Item No. – 6.15(N)

University of Mumbai

Syllabus for

B. Des. (Design)

Semester – III & IV

Choice Based Credit System

(With effect from the academic year 2023-24)

University of Mumbai

Syllabus for Approval

Sr. No.	Heading	Particulars
1	Title of Course	B. Des. (Design)
2	Eligibility for Admission	Passed HSC examination of Maharashtra State Board of Secondary and Higher Secondary Education (any Stream) or its equivalent examination with English as one of the subject and obtained at least 45% marks in aggregate. (Aggregate 40%marks for Backward Class categories, Economically Weaker Section and Persons with Disability candidates belonging to Maharashtra State) and obtained nonzero score in CET conducted by the Competent Authority (MAH-B. Design CET)
3	Passing Marks	40 %
4	Ordinance / Regulations (if any)	
5	No. of years/Semesters	4 years / 8 semester
6	Level	Under Graduation
7	Pattern	Semester
8	Status	New
9	To be implemented from Academic Year	With effect From Academic Year: 2023- 24

Offg. Associate Dean
Faculty of Science and Technology

Offg. Dean
Faculty of Science and Technology

Preamble

Introduction:

Design is a steam which shapes human experience of the future by learning from the past and the present. Design professionals are trained by exploration and practice to spot patterns, trends and possibilities in people's day to day lives and gain insights from them. For these insights to be objective, meaningful and most importantly, actionable enough to evolve into ideas that improve human lives as well as the environment, a multidisciplinary field like design offers itself like a framework of effective problem solving.

The B.Des. Course is a 4-year full-time course in which candidates are admitted after 10+2 level examination or its equivalent as per eligibility guidelines of the AICTE/ DTE/University of Mumbai.

The entire curriculum has been drafted to develop competencies required as a Designer in a gradual manner that spreads across the four years.

Aims and Objectives:

The aim of the undergraduate course is to develop skills, knowledge and attitude among the young design aspirants to become creative thinkers and problem solvers with a comprehensive value system. The value system here not only means social, moral and ethical values but also valuing our environment and the ecosystem.
The program aims at encouraging students to create original designs which involves converting artistic talent and creativity in designing apparel as well as products of everyday life. It provides an enhanced environment for creative things and integrated learning.

O. _____ Title of Course:-	**Bachelor of Design in Design (B. Des.)**
O._____ Eligibility:-	Passed HSC examination of Maharashtra State Board of Secondary and Higher Secondary Education (any Stream) or its equivalent examination with English as one of the subject and obtained at least 45% marks in aggregate. (Aggregate 40%marks for Backward Class categories, Economically Weaker Section and Persons with Disability candidates belonging to Maharashtra State) and obtained nonzero score in CET conducted by the Competent Authority **(MAH-B. Design CET)**
R._____ Admission Procedure:-	**MAH-B. Design CET** Entrance Examination for Admission to Professional Courses in Bachelor of Design Education through State Common Entrance Test Cell, Mumbai for the academic year will be held at the various examination centers within Maharashtra State. The Competent Authority shall invite Online Applications from Candidates for participating in CET and/ or CAP for seeking admission to the Courses for which State CET or alternative entrance examination is required for the academic year.
R._____ Term:-	From the academic Year 2022-23

R._____ Fee:	As per Fees Regulating Authority (FRA)
R._____ DURATION:-	4 Years
R._____ NUMBER OF STUDENTS:-	30
R._____ SCHEME OF EXAMINATION:-	Choice Based Credit System

Learning Outcomes:-

Learner should

1. **demonstrate skills and knowledge of the practices, languages, forms, materials and technologies in their relevant discipline;**
2. **research, develop and evaluate design concepts and processes by thinking creatively, critically and reflectively;**
3. **apply skills and knowledge to the creation, visualization and production of design projects;**
4. **work independently and collaboratively on design projects and respond to project demands;**
5. **interpret, communicate and present ideas, problems and arguments in modes suited to a range of audiences; and**
6. **recognize and reflect on social, cultural technological, environmental and ethical issues of creative practice and design considering local and international perspectives.**

Program Structure for Second Year Bachelor of Design in Design

SEMESTER III

University of Mumbai

(With Effect from 2023-2024)

Course Code	Course Name	Teaching Scheme (Contact Hours)			Credits Assigned		
		Theory	Tutorial	Studio	Theory	Studio	Total Credits
BDC301	Design Arts and Aesthetics	3	--	--	3	--	3
BDC302	Studies in Form	3	1	--	4	--	4
BDC303	Design Thinking	3	--	--	3	--	3
BDC304	Industrial Design-I	3	1	--	4	--	4
BDC305	Communication Design-I	2	1	--	3		3
BDL301	Design Arts and Aesthetics	--	--	2	--	1	1
BDL302	Communication Design-I	--	--	2	--	1	1
BDL303	Model Making Workshop-I	--	--	4	--	2	2
BDL304	Mini Project 1A	--		4		2	2
Total		**14**	**3**	**12**	**17**	**6**	**23**

Examination Scheme

Course Code	Course Name	Internal Assessment			End Sem Exam	Exam Duration (Hrs)	Term Work	Pract/ Oral	Total
		Test 1	Test 2	Avg					
		20	**20**	**20**	**80**	**3**	**50**	**50**	**100**
BDC301	Design Arts and Aesthetics	20	20	20	80	3	--	--	100
BDC302	Studies in Form	20	20	20	80	3	--	--	100
BDC303	Design Thinking	20	20	20	80	3	--	--	100

BDC304	Industrial Design-I	20	20	20	80	3	--	--	100
BDC305	Communication Design 1	20	20	20	80	3	--	--	100
BDL301	Design Arts and Aesthetics	--	--	--	--	--	25	25	50
BDL302	Communication Design 1	--	--	--	--	--	25	25	50
BDL303	Model Making Workshop-I	--	--	--	--	--	50	50	100
BDL304	Mini Project 1A	--	--	--	--	--	25	25	50
Total		**--**	**--**	**100**	**400**	**--**	**125**	**125**	**750**

Program Structure for Second year Bachelor of Design in Design

SEMESTER IV

University of Mumbai

(With Effect from 2023-2024)

Course Code	Course Name	Teaching Scheme (Contact Hours)			Credits Assigned		
		Theory	Tutorial	Studio	Theory	Studio	Total Credits
BDC401	Design Research Including User Study	3	--		3		3
BDC402	Packaging Design and Branding	3	**1***	--	4	--	4
BDC403	Interior Landscape Design	3	**1***	--	4	--	4
BDC404	Industrial Design -II	3	**1***	--	4	--	4
BDC405	Communication Design -II	2	--		2		2
BDL401	Design Research Including User Study			2		1	1
BDL402	Communication Design -II			2		1	1

BDL403	Model Making Workshop-II			4		2	2
BDL404	Mini Project 1 B	--	--	4	--	2	2
Total		**14**	**3**	**12**	**17**	**6**	**23**

Course Code	**Course Name**	**Examination Scheme**							
		Internal Assessment			**End Sem Exam**	**Exam Duration**	**Term Work**	**Pract/ Oral**	**Total**
		Test 1	**Test 2**	**Avg**		**(Hrs)**			
		20	**20**	**20**	**80**	**3**	**50**	**50**	**100**
BDC401	Design Research Including User Study	20	20	20	80	3	--	--	100
BDC402	Packaging Design and Branding	20	20	20	80	3	--	--	100
BDC403	Interior Landscape Design	20	20	20	80	3	--	--	100
BDC404	Industrial Design -II	20	20	20	80	3	--	--	100
BDC405	Communication Design -II	20	20	20	80	3	--	--	100
BDL401	Design Research Including User Study						25	25	50
BDL402	Communication Design -II						25	25	50
BDL403	Model Making Workshop-II						50	50	100
BDL404	Mini Project 1 B	--	--	--	--	--	25	25	50
Total				**100**	**400**		**125**	**125**	**750**

Course Code	Course Name	Teaching Scheme (Contact Hours)				
		Theory	Tutorial	Studio	Theory	Studio
BDC301	Design Arts and Aesthetics	3	--	--	3	--
BDC302	Studies in Form	3	**1**	--	4	--
BDC303	Design Thinking	3	--	--	3	--
BDC304	Industrial Design-I	3	**1**	--	4	--
BDC305	Communication Design-I	2	**1**	--	3	
BDL301	Design Arts and Aesthetics	--	--	2	--	1
BDL302	Communication Design-I	--	--	2	--	1
BDL303	Model Making Workshop-I	--	--	4	--	2
BDL304	Mini Project 1A	--		4		2
Total		**14**	**3**	**12**	**17**	**6**

Course Code	Course Name	Internal Assessment			End Sem Exam	Exam Duration	Term Work	Pract / Oral	Total
		Test 1	Test 2	Avg		(Hrs)			
		20	**20**	**20**	**80**	**3**	**50**	**50**	**100**
BDC301	Design Arts and Aesthetics	20	20	20	80	3	--	--	100
BDC302	Studies in Form	20	20	20	80	3	--	--	100

BDC303	Design Thinking	20	20	20	80	3	--	--	100
BDC304	Industrial Design-I	20	20	20	80	3	--	--	100
BDC305	Communication Design 1	20	20	20	80	3	--	--	100
BDL301	Design Arts and Aesthetics	--	--	--	--	--	25	25	50
BDL302	Communication Design 1	--	--	--	--	--	25	25	50
BDL303	Model Making Workshop-I	--	--	--	--	--	50	50	100
BDL304	Mini Project 1A	--	--	--	--	--	25	25	50
Total		**--**	**--**	**100**	**400**	**--**	**125**	**125**	**750**

Teaching Scheme						
Course Code	**Course Name**	**(Contact Hours)**		**Credits Assigned**		
		Theory	**Studio**	**Theory**	**Studio**	**Total**
BDC301	**Design Arts and Aesthetics**	3	--	3	--	3

Course Code	**Course Name**	**Examination Scheme**							
		Theory					**Term Work**	**Pract**	**Total**
		Internal Assessment			**End Sem Exam**	**Exam Duration (in Hrs)**			
		Test 1	**Test 2**	**Avg.**					
BDC301	**Design Arts and Aesthetics**	20	20	20	80	3			100

Course Outcomes/Objectives										
Course Objectives										
1	To understand the historical trends of Indian art and culture									
2	To understand how to use art for the social and intellectual development of society.									
Course Outcomes: The learner will be able to……										
1	Understand the importance of aesthetics in design.									
2	Contribute in the development of society through art.									
3	Understand the relation between art and human emotions									
4	Understand and learn various design philosophies.									
5	Understand the contribution of Indian art and design in mankind development									
Sr.No.	**Module**	**Detailed Content**							**Hours**	
I	**Module 1**	Origin of aesthetic and generate the value system, major contribution of aesthetic in art and design.							**7**	
II	**Module 2**	Social and intellectual development through art.							**7**	
III	**Module 3**	Development of different styles in creative and expressive field of human emotions.							**8**	
IV	**Module 4**	Design history of Bauhaus, Ulm school, Scandinavian design, Design and Art in post-modernism period.							**8**	
V	**Module 5**	Holistic contribution of Indian art and design.							**8**	
Text Books and References:										
1. Bergson, H. (1983). Creative evolution. University Press of America.										

2. Sparke, P. (2013). An introduction to design and culture: 1900 to the present. Rout ledge.

3. H. Kumar Vyas (2007) "Design the International Movement with Indian Parallel".

4. Robert Bone (2002) "Art and Design Fundamentals".

5. De Witt H. Parker (2001) "The principle of Aesthetics".

Internal Assessment (IA) for 20 marks:

IA will consist of Two Compulsory Internal Assessment Tests. Approximately 40% to 50% of syllabus content must be covered in First IA Test and remaining 40% to 50% of syllabus content must be covered in Second IA Test

End Semester Examination:

Weightage of each module in end semester examination will be proportional to number of respective lecture hours mentioned in the curriculum.

- Question Paper will comprise of a total of six questions each carrying 20 marks.
- Q.1 will be compulsory and should cover maximum contents of the syllabus
- **Remaining questions** will be **mixed in nature** (part (a) and part (b) of each question must be from different modules. For example, if Q.2 has part (a) from Module 3 then part (b) must be from any other Module randomly selected from all the modules)
- A total of **four questions** need to be answered

Teaching Scheme						
Course Code	Course Name	(Contact Hours)		Credits Assigned		
		Theory	Studio	Theory	Studio	Total
BDC302	Studies in Form	4	--	4	--	4

Course Code	Course Name	Examination Scheme							
		Theory					Term Work	Pract	Total
		Internal Assessment			End Sem Exam	Exam Duration (in Hrs)			
		Test 1	Test 2	Avg.					
BDC302	Studies in Form	20	20	20	80	3			100

Course Outcomes/Objectives	
Course Objectives	
1	To understand form and its transformation
2	Develop ability to manipulate form for demonstration of varied expressions
3	Understand and develop a family of forms with a common design language.
Course Outcomes: The learner will be able to……	
1	Able to generate two dimensional rhythms, deformations and patterns in design.
2	Understand in cognitive, morphological process inherent in applying form analogies for generating three-dimensional design concepts.
3	Able to design a product of low complexity, relatively simple geometry and which utilizes a commonly available material and communicate the assembly procedure for the developed product.
4	Understand semantic analysis of hand-held products and similar elements.

5	Able to carry out syntactic analysis of hand-held products and similar elements.	
6	Knowledge on pragmatic analysis of hand-held products and similar elements.	

Sr.No.	Module	Detailed Content	Hours
I	**Understanding of form**	Definition of form, evolution of a flat shape into a volume, Classification of form 2D & 3D, Solids (Platonic, Archimedean).To generate two dimensional rhythms, deformations and patterns in design.	**7**
II	**Volume relationships**	Dominant, subdominant & subordinate, To design a product of low complexity, relatively simple geometry and which utilizes a commonly available material such as cardboard.	**7**
III	**Transformation**	Radii manipulation, Form transition (addition & subtraction). To develop an understanding of the cognitive, morphological process in designing a form.	**8**
IV	**Form, Emotions & Identity**	Abstraction & expression of form, Identity experimentations with form, texture & color, Family of forms	**8**
V	**Form explorations**	Through different materials (Like- Paper Mache, thread, Plaster of Paris, Clay etc.) To carry out semantic analysis of hand-held products and similar elements	**8**

Text Books and References:

1. Elam, Kimberly; Geometry of Design: Studies in Proportion and Composition, Princeton Architectural Press, 2001.

2. Bachelard, Gaston; Jolas,

Maria (Translator); The Poetics of Space, Publisher: Beacon Press; Reprint edition, 1994									
3.Language of Vision, by Gyorgy Kepes and S Giedion, Literary Licensing, LLC (4 August 2012).									

Internal Assessment (IA) for 20 marks:
IA will consist of Two Compulsory Internal Assessment Tests. Approximately 40% to 50% of syllabus content must be covered in First IA Test and remaining 40% to 50% of syllabus content must be covered in Second IA Test
End Semester Examination:
Weight age of each module in end semester examination will be proportional to number of respective lecture hours mentioned in the curriculum.

Question paper format
● Question Paper will comprise of a total of six questions each carrying 20 marks.
● Q.1 will be compulsory and should cover maximum contents of the syllabus
● **Remaining questions** will be **mixed in nature** (part (a) and part (b) of each question must be from different modules. For example, if Q.2 has part (a) from Module 3 then part (b) must be from any other Module randomly selected from all the modules)
● A total of **four questions** need to be answered

Teaching Scheme						
Course Code	**Course Name**	**(Contact Hours)**		**Credits Assigned**		
		Theory	**Studio**	**Theory**	**Studio**	**Total**
BDC303	Design Thinking	4	--	4	--	4

Course Code	**Course Name**	**Examination Scheme**

		Theory					Term Work	Pract	Total
		Internal Assessment			End Sem Exam	Exam Duration (in Hrs)			
		Test 1	Test 2	Avg.					
BDC303	**Design Thinking**	20	20	20	80	3			100

Course Outcomes/Objectives	
Course Objectives	
1	What design thinking is and when to use it, Familiarize with different Design Thinking Frameworks
2	How to prepare to see and take action when opportunity arises – Problem/Opportunity identification, develop sound hypotheses, collect and analyse appropriate data, and develop ways to collect meaningful feedback in a real-world environment
3	How to use design thinking to generate innovative ideas (Convergent & Divergent Thinking)
4	How to take the many ideas generated and determine which ones are likely to produce specific, desired outcomes
Course Outcomes: The learner will be able to……	
1	Apply the theory of Design Thinking to public design challenges.
2	Use their skills and knowledge to identify and communicate public concerns from the perspective of those living in the communities along the Green Line.
3	Generate ideas using Creative thinking tools and techniques.
4	Create compelling narratives and presentations through visual communication and storytelling.

5	Collaborate with other students who have varied perspectives and areas of expertise to formulate and prioritize community concerns and provide opportunities for change.	
6	Seek consultation from and establish collaborations with members and leaders of various communities, organizations, and agencies to develop innovative approaches to community engagement, problem- seeking (and reframing), and problem-solving in local communities.	

Sr. No.	Module	Detailed Content	Hours
I	**Introduction to Design Thinking**	What design thinking is and when to use it Introduction to Design Thinking, its systematic application using Design Process in a context.	**7**
II	**Problems & Opportunities**	How to prepare to see and take action when opportunity arises – Problem/Opportunity identification, develop sound hypotheses, collect and analyze appropriate data, and develop ways to collect meaningful feedback in a real-world environment. Ranking of problem statements	**7**
III	**Design Thinking Frameworks**	Familiarize with different Design Thinking Frameworks , Create list of problem statements for selecting to work on	**8**
IV	**Need to be Empathetic**	"Empathy" work , plan and responsibilities ,Reflection 1 - Project presentations and review , Reframe the problem statement based on analysis and feedback	**8**
V	**Use of design thinking**	Ideation using Creative tools and techniques – Make Sketches, Drawing of ideas explorations, identify possible relevant ideas to create proposed ideas as presentable renderings to finalize	**8**

Text Books and References:

1.Kepes, Gyorgy; Language Of Vision, Dover Publications, 1995 Elam, Kimberly;

2.Geometry Of Design: Studies In

Proportion And Composition, Princeton Architectural Press, 2001 Bachelard, Gaston									
3.Bachelard, Gaston; Jolas, Maria (Translator); The Poetics Of Space, Publisher: Beacon Press; Reprint edition, 1994									

Internal Assessment (IA) for 20 marks:

IA will consist of Two Compulsory Internal Assessment Tests. Approximately 40% to 50% of syllabus content must be covered in First IA Test and remaining 40% to 50% of syllabus content must be covered in Second IA Test

End Semester Examination:

Weightage of each module in end semester examination will be proportional to number of respective lecture hours mentioned in the curriculum.

Question paper format

- Question Paper will comprise of a total of six questions each carrying 20 marks.
- Q.1 will be compulsory and should cover maximum contents of the syllabus
- **Remaining questions** will be **mixed in nature** (part (a) and part (b) of each question must be from different modules. For example, if Q.2 has part (a) from Module 3 then part (b) must be from any other Module randomly selected from all the modules)
- A total of **four questions** need to be answered

Teaching Scheme

Course Code	Course Name	(Contact Hours)		Credits Assigned		
		Theory	Studio	Theory	Studio	Total
BDC304	**Industrial Design-I**	4	--	4	--	4

Course Code	Course Name	Examination Scheme							
		Theory					Term Work	Pract	Total
		Internal Assessment			End Sem Exam	Exam Duration (in Hrs)			
		Test 1	Test 2	Avg.					
BDC304	**Industrial Design-I**	20	20	20	80	3			100

Course Outcomes/Objectives	
Course Objectives	
1	To develop the ability to independently carry out research /investigation and development work to solve practical problems
2	To develop the ability to write and present a substantial technical report/document
Course Outcomes: The learner will be able to……	
1	Develop leadership qualities required for industries by nurturing multiple skills
2	Develop engineering knowledge, innovation associated with designing and development of industrial products effectively
3	Grow in the development of skills, knowledge and dispositions that enable graduates to immediately function as entry-level professional industrial designers
4	Design, develop, implement and improve integrated systems or products that include people, materials, information, equipment and energy using appropriate analytical, computational and experimental practices
5	Design, develop, implement and improve integrated systems or products that include people, materials, information, equipment and energy using appropriate analytical, computational and experimental practices

Sr.No.	Module	Detailed Content	Hours
I	**Industrial products and aesthetics**	Simple products, product color and aesthetics.	**7**

II	**Product Design**	Simple products, Design from consumers point of view, product language.	**7**
III	**Industrial design terms**	Aesthetic aspect, functionality, product semantic, meaning of sign and symbol, product analysis, product form and psychology.	**8**
IV	**Study of different industrial products**	White goods, medical products, complex products etc.	**8**
V	**Interaction Design**	Introduction to Interaction Design. Concepts of Interaction, Task analysis, design, Fitness, Information age, Controls and displays, Feedback, Affordances, Bits and atoms	**8**

Text Books and References:

1. Heufler, G. (2004). Design basics. NiggliVerlag.

2. Bramston, D. (2010). Basics Product Design 03: Visual Conversations (Vol. 3). AVA Publishing.

3. Bramston, D. (2008). Basics Product Design 01: Idea Searching (Vol. 1). AVA Publishing.

4. Cuffaro, D&Zaksenberg, I (2013) The Industrial Design

Reference & Specification Book.									

Internal Assessment (IA) for 20 marks:

IA will consist of Two Compulsory Internal Assessment Tests. Approximately 40% to 50% of syllabus content must be covered in First IA Test and remaining 40% to 50% of syllabus content must be covered in Second IA Test

Internal Assessment (IA) for 20 marks:

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Question paper format

- Question Paper will comprise of a total of six questions each carrying 20 marks.
- Q.1 will be compulsory and should cover maximum contents of the syllabus
- **Remaining questions** will be **mixed in nature** (part (a) and part (b) of each question must be from different modules. For example, if Q.2 has part (a) from Module 3 then part (b) must be from any other Module randomly selected from all the modules)
- A total of **four questions** need to be answered

Teaching Scheme

Course Code	Course Name	(Contact Hours)		Credits Assigned		
		Theory	Studio	Theory	Studio	Total
BDC305	**Communication Design 1**	2	--	2	--	2

Course Code	Course Name	Examination Scheme							
		Theory					Term Work	Pract	Total
		Internal Assessment			End Sem Exam	Exam Duration (in Hrs)			
		Test 1	Test 2	Avg.					
BDC305	Communication Design 1	20	20	20	80	3			100

Course Outcomes/Objectives									
Course Objectives									
1	To develop an ability to design visual communication means for effective communication.								
2	To develop an ability to design visual communication in various forms.								
Course Outcomes: The learner will be able to……									
1	Develop thinking of using semiotics, semantics and other tools for effective communication.								
2	Develop the skill to use human perception, aesthetics, emotion and subjectivity for effective communication.								
3	Use the tools of visual communication.								
4	Develop communication design using visual basics and visual language.								
5	Understand the importance and effective use of information design.								
Sr.No.	**Module**	**Detailed Content**							**Hours**
I	**Introduction to communication design**	Communication basics, semiotics, semantics, and typography and: Introduction to Communication Design							**7**
II	**Effective Communication through perception**	Effective Communication, Human Perception, Aesthetics, Emotion and Subjectivity, Visual Perception							**7**
III	**Visual Communication**	Cognition: Human Eye, Optical Illusion, Color Perception, Depth Perception, Motion Perception.							**8**
IV	**Visual Language**	Visual Language: Semiotics - Semantics, Syntactic, Pragmatics, Sign - Design of Icon, Index, Symbol and Logo. Visual Hierarchy: Visual Focal, Visual Order, Eye Movement, Visual Flow and Continuity, Visual Composition.							**8**
V	**Information Design**	Information Design: Information Chunking, Grids, Visual Abstraction of Quantitative information, Application of Gestalt Laws of grouping, Information Graphics.							**8**
Text Books and References:									
1. Malamed, C. (2011). Visual language for									

designers: principles for creating graphics that people understand. Rockport Pub.

2.Arnheim, R. (1969). Visual thinking. Univ of California Press.

3. Bertin, J. (1981). Graphics and graphic information processing. Walter de Gruyter.

4. Barry, A. M. (1997). Visual intelligence: Perception, image, and manipulation in visual communicatio n. SUNY Press

5. Meirelles, I. (2013). Design for information: an introduction to the histories, theories, and best practices behind effective information visualizations. Rockport publishers.

Internal Assessment (IA) for 20 marks:

IA will consist of Two Compulsory Internal Assessment Tests. Approximately 40% to 50% of syllabus content must be covered in First IA Test and remaining 40% to 50% of syllabus content must be covered in Second IA Test

Internal Assessment (IA) for 20 marks:

IA will consist of Two Compulsory Internal Assessment Tests. Approximately 40% to

50% of syllabus content must be covered in First IA Test and remaining 40% to 50% of syllabus content must be covered in Second IA Test
Question paper format
● Question Paper will comprise of a total of six questions each carrying 20 marks.
● Q.1 will be compulsory and should cover maximum contents of the syllabus
● **Remaining questions** will be **mixed in nature** (part (a) and part (b) of each question must be from different modules. For example, if Q.2 has part (a) from Module 3 then part (b) must be from any other Module randomly selected from all the modules)
● A total of **four questions** need to be answered

Teaching Scheme						
Course Code	**Course Name**	**(Contact Hours)**		**Credits Assigned**		
		Theory	**Studio**	**Theory**	**Studio**	**Total**
BDL301	**Design Arts and Aesthetics**		2		1	1

Course Code	**Course Name**	**Examination Scheme**							
		Theory					**Term Work**	**Pract**	**Total**
		Internal Assessment			**End Sem Exam**	**Exam Duration (in Hrs)**			
		Test 1	**Test 2**	**Avg.**					
BDL301	**Design Arts and Aesthetics**						**25**	**25**	**50**

Course Outcomes/Objectives	
Course Outcomes	
1	Understand the importance of aesthetics in design.
2	Contribute in the development of society through art.
3	Understand the relation between art and human emotions
4	Understand and learn various design philosophies.
5	Understand the contribution of Indian art and design in mankind development

Sr.No.	**Module**	**Detailed Content**							**Hours**	
I	**Lab Act 1**	Origin of aesthetic and generate the value system, major contribution of aesthetic in art and design.							**4**	
II	**Lab Act 2**	Social and intellectual development through art.							**4**	
III	**Lab Act 3**	Development of different styles in creative and expressive field of human emotions.							**4**	
IV	**Lab Act 4**	Design history of Bauhaus, Ulm school, Scandinavian design, Design and Art in post-modernism period.							**4**	
V	**Lab Act 5**	Holistic contribution of Indian art and design.							**4**	
Note: Suggested List of Experiments is indicative. However, flexibility lies with individual course instructors to design and introduce new, innovative and challenging experiments, / Lab work (limited to maximum 30% variation to the suggested list) from within the curriculum, so that the fundamentals and applications can be explored to give greater clarity to the students and they can be motivated to think differently.										
Text Books and References:										
1. Bergson, H. (1983). Creative evolution. University Press of America.										
2. Sparke, P. (2013). An introduction to design and culture: 1900 to the present. Rout ledge.										
3. H. Kumar Vyas (2007) “Design the International Movement with Indian Parallel”.										
4. Robert										

Bone (2002) "Art and Design Fundamentals".									
5. De Witt H. Parker (2001) "The principle of Aesthetics".									

Assessment:
Distribution of marks for term work-25
Laboratory work- 20 Marks
Attendance- 05 Marks

Practical/Oral examination

1. Each student will be given a practical assignment on the basis of the above exercises which will be completed within a given time and assessed by examiners during the oral examination.

2. The distribution of marks for oral-practical examination shall be as follows:

a. Practical Assignment : 15 marks

b. Oral : 10 marks

3. Evaluation of practical/oral examination to be done based on the performance of practical assignment.

4. Students work along with evaluation report to be preserved till the next examination

Teaching Scheme						
Course Code	**Course Name**	**(Contact Hours)**		**Credits Assigned**		
		Theory	**Studio**	**Theory**	**Studio**	**Total**
BDL302	**Communication Design 1**	2	--	2	--	2

Course Code	**Course Name**	**Examination Scheme**					
		Theory			**Term Work**	**Pract**	**Total**
		Internal Assessment	**End Sem**	**Exam Duratio**			

					Exam	n (in Hrs)			
		Test 1	Test 2	Avg.					
BDL302	Communication Design 1						25	25	50

Course Outcomes/Objectives	
The Course Aims	
1	To develop an ability to design visual communication means for effective communication.
2	To develop an ability to design visual communication in various forms.

Course Outcomes: The learner will be able to……	
1	Develop thinking of using semiotics, semantics and other tools for effective communication.
2	Develop the skill to use human perception, aesthetics, emotion and subjectivity for effective communication.
3	Use the tools of visual communication.
4	Develop communication design using visual basics and visual language.
5	Understand the importance and effective use of information design.

Sr.No.	Module	Detailed Content	Hours
I	**Introduction to communication design**	Communication basics, semiotics, semantics, and typography and: Introduction to Communication Design	**7**
II	**Effective Communication through perception**	Effective Communication, Human Perception, Aesthetics, Emotion and Subjectivity, Visual Perception	**7**
III	**Visual Communication**	Cognition: Human Eye, Optical Illusion, Color Perception, Depth Perception, Motion Perception.	**8**
IV	**Visual Language**	Visual Language: Semiotics - Semantics, Syntactic, Pragmatics, Sign - Design of Icon, Index, Symbol and Logo. Visual Hierarchy: Visual Focal, Visual Order, Eye Movement, Visual Flow and Continuity, Visual Composition.	**8**

V	**Information Design**	Information Design: Information Chunking, Grids, Visual Abstraction of Quantitative information, Application of Gestalt Laws of grouping, Information Graphics.	**8**

Note: Suggested List of Experiments is indicative. However, flexibility lies with individual course instructors to design and introduce new, innovative and challenging experiments, / Lab work (limited to maximum 30% variation to the suggested list) from within the curriculum, so that the fundamentals and applications can be explored to give greater clarity to the students and they can be motivated to think differently.

Text Books and References:

1. Malamed, C. (2011). Visual language for designers: principles for creating graphics that people understand. Rockport Pub.

2.Arnheim, R. (1969). Visual thinking. Univ of California Press.

3. Bertin, J. (1981). Graphics and graphic information processing. Walter de Gruyter.

4. Barry, A. M. (1997). Visual intelligence: Perception, image, and manipulation in visual communication. SUNY Press

5. Meirelles, I. (2013). Design for information: an introduction to the histories, theories, and best practices behind effective information visualizations Rockport publishers.

Assessment:
Distribution of marks for term work-25
Laboratory work- 20 Marks
Attendance- 05 Marks

Practical/Oral examination

1. Each student will be given a practical assignment on the basis of the above exercises which will be completed within a given time and assessed by examiners during the oral examination.

2. The distribution of marks for oral-practical examination shall be as follows:

a. Practical Assignment : 15 marks

b. Oral : 10 marks

3. Evaluation of practical/oral examination to be done based on the performance of practical assignment.

4. Students work along with evaluation report to be preserved till the next examination

Teaching Scheme

Course Code	Course Name	(Contact Hours)		Credits Assigned		
		Theory	Studio	Theory	Studio	Total
BDL303	**Model Making Workshop-I**	2	--	2	--	2

Course Code	Course Name	Examination Scheme							
		Theory					Term Work	Pract	Total
		Internal Assessment			End Sem Exam	Exam Duration (in Hrs)			
		Test 1	Test 2	Avg.					
BDL303	Model Making Workshop-I						50	50	100

Course Outcomes/Objectives	
The Course Aims	
1	To identify tools, work material and measuring instruments useful for Model making.

Course Outcomes: The learner will be able to……	
1	Gain basic working knowledge and Make models of various forms paper models.
2	Gain basic working knowledge and Make models from terracotta and clay.
3	Gain basic working knowledge and make models from plaster of paris
4	Gain basic working knowledge and make models from wood
5	Gain basic working knowledge and make models from metal

Sr. No.	Module	Detailed Content	Hours
I	Paper model	Paper model : Introduction to surface development method, Geometric and organic forms using surface development, origami etc	7
II	Terracotta and plasticine clay	Terracotta and plasticine clay : Introduction to clay as a material, tools used for clay modeling, making sculptures and other models using clay, pottery, clay throwing techniques	7
III	Plaster of Paris	Plaster of Paris : Working with PoP as a material, carving PoP to desired shape, Sanding and finishing PoP models.	8

IV	Wood	Wood: Working with wood, cutting, sanding, joineries, turning and facing operations with wood.	**8**
V	Metal	Metal : working with different types of sheet, billet and metal rods. Using tools like angle grinder and die grinder to shape metal. Basic welding techniques (arc welding, tig welding, gas welding), polishing and finishing metal surfaces.	**8**

Note: Suggested List of Experiments is indicative. However, flexibility lies with individual course instructors to design and introduce new, innovative and challenging experiments, / Lab work (limited to maximum 30% variation to the suggested list) from within the curriculum, so that the fundamentals and applications can be explored to give greater clarity to the students and they can be motivated to think differently.

Text Books and References:

Assessment:
Distribution of marks for term work-50
Laboratory work- 45 Marks
Attendance- 05 Marks

Practical/Oral examination

1. Each student will be given a practical assignment on the basis of the above exercises which will be completed within a given time and assessed by examiners during the oral examination.

2. The distribution of marks for oral-practical examination shall be as follows:

a. Practical Assignment : 30 marks

b. Oral : 20 marks

3. Evaluation of practical/oral examination to be done based on the performance of practical assignment.

4. Students work along with evaluation report to be preserved till the next examination

Teaching Scheme

Course Code	Course Name	(Contact Hours)		Credits Assigned		
		Theory	Studio	Theory	Studio	Total
BDL304	**Mini Project 1A**	--	4	--	2	2

Course Code	Course Name	Examination Scheme			
		Theory	Term Work	Pract	Total

		Internal Assessment			End Sem Exam	Exam Duration (in Hrs)			
		Test 1	Test 2	Avg.					
BDL304	Mini Project 1A						25	25	50

Course Outcomes/Objectives	
The Course Aims	
1	1. To acquaint with the process of identifying the needs and converting it into the problem.
2	2. To familiarize the process of solving the problem in a group.
3	3. To acquaint with the process of applying basic Design fundamentals to attempt solutions to the problems.
4	4. To inculcate the process of self-learning and research.

Expected Course Outcome: The students will have,	
1	Identify problems based on societal /research needs.
2	Apply Knowledge and skill to solve societal problems in a group.
3	Develop interpersonal skills to work as member of a group or leader.
4	Draw the proper inferences from available results through theoretical/ experimental/simulations.
5	Analyse the impact of solutions in societal and environmental context for sustainable development.
6	Excel in written and oral communication.
7	Demonstrate capabilities of self-learning in a group, which leads to lifelong learning.
8	Demonstrate project management principles during project work.

Guidelines for Mini Project

1. Students shall form a group of 3 to 4 students, while forming a group shall not be allowed less than three or more than four students, as it is a group activity.
2. Students should do survey and identify needs, which shall be converted into problem statement for mini project in consultation with faculty supervisor/head of department/internal committee of faculties.
3. Students hall submit implementation plan in the form of Gantt/PERT/CPM chart, which will cover weekly activity of mini project.
4.A log book to be prepared by each group, wherein group can record weekly work progress, guide/supervisor can verify and record notes/comments.
5. Faculty supervisor may give inputs to students during mini project activity; however,

focus shall be on self-learning.	
6. Students in a group shall understand problem effectively, propose multiple solution and select best possible solution in consultation with guide/ supervisor.	
7.Students shall convert the best solution into working model using various components of their domain areas and demonstrate.	
8. The solution to be validated with proper justification and report to be compiled in standard format of University of Mumbai.	
9. With the focus on the self-learning, innovation, addressing societal problems and entrepreneurship quality development within the students through the Mini Projects, it is preferable that a single project of appropriate level and quality to be carried out in two semesters by all the groups of the students. i.e. Mini Project 1 in semester III and IV. Similarly, Mini Project 2 in semesters V and VI.	
10. However, based on the individual students or group capability, with the mentor's recommendations, if the proposed Mini Project adhering to the qualitative aspects mentioned above gets completed in odd semester, then that group can be allowed to work on the extension of the Mini Project with suitable improvements/modifications or a completely new project idea in even semester. This policy can be adopted on case by case basis.	
Guidelines for Assessment of Mini Project:	
Term Work	
1. The review/ progress monitoring committee shall be constituted by head of departments of each institute. The progress of mini project to be evaluated on continuous basis, minimum two reviews in each semester.	
2. In continuous assessment focus shall also be on each individual student, assessment based on individual's contribution in group activity, their understanding and response to questions.	
3. Distribution of Term work marks for both semesters shall be as below;	
Marks awarded by guide/supervisor based on log book : 10	
Marks awarded by review committee : 10	
Quality of Project report : 05	
Review/progress monitoring committee may consider following points for assessment based on either one year or half year project as mentioned in general guidelines.	
One-year project:	
1. In first semester entire theoretical solution shall be ready, including components/system selection and cost analysis. Two reviews will be conducted based on presentation given by students group.	
-- First shall be for finalization of problem	
-- Second shall be on finalization of proposed solution of problem.	

2. In second semester expected work shall be procurement of component's/systems, building of working prototype, testing and validation of results based on work completed in an earlier semester.	
-- First review is based on readiness of building working prototype to be conducted.	
-- Second review shall be based on poster presentation cum demonstration of working model in last month of the said semester.	
Half-year project:	
1. In this case in one semester students' group shall complete project in all aspects including,	
- Identification of need/problem	
- Proposed final solution	
- Procurement of components/systems	
- Building prototype and testing	
2. Two reviews will be conducted for continuous assessment,	
- First shall be for finalization of problem and proposed solution	
- Second shall be for implementation and testing of solution.	
Assessment criteria of Mini Project	
Mini Project shall be assessed based on following criteria;	
1. Quality of survey/ need identification	
2. Clarity of Problem definition based on need.	
3. Innovativeness in solutions	
4. Feasibility of proposed problem solutions and selection of best solution	
5. Cost effectiveness	
6. Societal impact	
7. Innovativeness	
8. Cost effectiveness and Societal impact	
9. Full functioning of working model as per stated requirements	
10. Effective use of skill sets	
11. Effective use of standard engineering norms	
12. Contribution of an individual's as member or leader	
13. Clarity in written and oral communication	
In one year, project, first semester evaluation may be based on first six criteria's and remaining may be used for second semester evaluation of performance of students in mini project.	

In case of half year project all criteria's in generic may be considered for evaluation of performance of students in mini project.
Guidelines for Assessment of Mini Project Practical/Oral Examination:
1. Report should be prepared as per the guidelines issued by the University of Mumbai.
2. Mini Project shall be accessed through a presentation and demonstration of working model by the student project group to a panel of Internal and External Examiners preferably from industry or research organizations having experience of more than five years approved by head of Institution.
3. Students shall be motivated to publish a paper based on the work in Conferences/students competitions.

Program Structure for Second year Bachelor of Design in Design

SEMESTER IV

University of Mumbai

(With Effect from 2023-2024)

Course Code	Course Name	Teaching Scheme (Contact Hours)			Credits Assigned		
		Theory	Tutorial	Studio	Theory	Studio	Total Credits
BDC401	Design Research Including User Study	3	--		3		3
BDC402	Packaging Design and Branding	3	**1***	--	4	--	4
BDC403	Interior Landscape Design	3	**1***	--	4	--	4
BDC404	Industrial Design -II	3	**1***	--	4	--	4
BDC405	Communication Design -II	2	--		2		2
BDL401	Design Research Including User Study			2		1	1
BDL402	Communication Design -II			2		1	1

BDL403	Model Making Workshop-II			4		2	2		
BDL404	Mini Project 1 B	--	--	4	--	2	2		
Total		**14**	**3**	**12**	**17**	**6**	**23**		

Course Code	**Course Name**	**Examination Scheme**							
		Internal Assessment			**End Sem Exam**	**Exam Duration**	**Term Work**	**Pract/ Oral**	**Total**
		Test 1	**Test 2**	**Avg**		**(Hrs)**			
		20	**20**	**20**	**80**	**3**	**50**	**50**	**100**
BDC401	Design Research Including User Study	20	20	20	80	3	--	--	100
BDC402	Packaging Design and Branding	20	20	20	80	3	--	--	100
BDC403	Interior Landscape Design	20	20	20	80	3	--	--	100
BDC404	Industrial Design -II	20	20	20	80	3	--	--	100
BDC405	Communication Design -II	20	20	20	80	3	--	--	100
BDL401	Design Research Including User Study						25	25	50
BDL402	Communication Design -II						25	25	50
BDL403	Model Making Workshop-II						50	50	100
BDL404	Mini Project 1 B	--	--	--	--	--	25	25	50
Total				**100**	**400**		**125**	**125**	**750**

Teaching Scheme						
Course Code	**Course Name**	**(Contact Hours)**		**Credits Assigned**		
		Theory	**Studio**	**Theory**	**Studio**	**Total**
BDC401	**Design Research Including User Study**	3	--	3	--	3

Course Code	Course Name	Examination Scheme							
		Theory					Term Work	Pract	Total
		Internal Assessment			End Sem Exam	Exam Duration (in Hrs)			
		Test 1	Test 2	Avg.					
BDC401	**Design Research Including User Study**	20	20	20	80	3			100

Course Outcomes/Objectives	
Course Objectives	
1	To understand the importance of research in developing solution
2	To finding out the suitable research tool
Course Outcomes Learner will be able to ……	
1	Identify the qualitative and quantitative methods of research
2	Design the framework of research to develop a solution
3	Develop solutions based on references and observations
4	Use photography as effective tool to do the research
5	Portray research findings using persona, stories and scenarios

Sr.No.	Module	Detailed Content	Hours
I	**Research Methods**	Qualitative and quantitative research methodology,	**7**
II	**Research Tools**	Questionnaire design, validation, repeatability testing, psychophysical scales,	**7**
III	**Research Analysis**	Direct observation and activity analysis,	**8**

IV	**Photography as a tool**	Photography as a tool in design research etc	**8**
V	**Persona**	Persona, scenario, story boarding.	**8**

Text Books and References:

1. Laurel, B. (2003). Design research: Methods and perspectives. MIT press. 2. Koskinen, I., Zimmerman, J., Binder, T., Redstrom, J., &Wensveen, S. (2011). Design research through practice: From the lab, field, and showroom. Elsevier.
3. Creswell, J. W., & Clark, V. L. P. (2007). Designing and conducting mixed methods research.
4. Creswell, J. W. (2013). Research design: Qualitative, quantitative, and mixed methods approaches. Sage publications.

Internal Assessment (IA) for 20 marks:

IA will consist of Two Compulsory Internal Assessment Tests. Approximately 40% to 50% of syllabus content must be covered in First IA Test and remaining 40% to 50% of syllabus content must be covered in Second IA Test

Question paper format

- Question Paper will comprise of a total of six questions each carrying 20 marks.
- Q.1 will be compulsory and should cover maximum contents of the syllabus
- **Remaining questions** will be **mixed in nature** (part (a) and part (b) of each question must be from different modules. For example, if Q.2 has part (a) from Module 3 then part (b) must be from any other Module randomly selected from all the modules)
- A total of **four questions** need to be answered

Teaching Scheme

Course Code	Course Name	(Contact Hours)		Credits Assigned		
		Theory	Studio	Theory	Studio	Total
BDC402	**Packaging Design and Branding**	4	--	4	--	4

Course Code	Course Name	Examination Scheme			
		Theory	Term Work	Pract	Total

		Internal Assessment			End Sem Exam	Exam Duration (in Hrs)			
		Test 1	Test 2	Avg.					
BDC402	**Packaging Design and Branding**	20	20	20	80	3			100

Course Outcomes/Objectives	
Course Objectives	
1	To understand the principles of packaging techniques.
2	To make learner able to design effective packaging solutions.
Course Outcomes	
1	Identify the key elements of a packaging composition including placement, product, and audience.
2	Identify the production, design, and budgetary differences between mass and prestige packaging designs.
3	Understand and discuss how a product line is developed, updated, and expanded.
4	Develop an understanding of how playful packaging design is created through typography, balance, color, and other attributes
5	Develop an understanding of the ways in which marketing research, target audiences, and user profiles affect the packaging design process.

Sr. No.	Module	Detailed Content	Hours
I	**Seeing in 3D**	Global Packaging Branding and Promotion. Branding Product Lines, Project - Champagne carton OR Packaging Culture: Finding packaging solutions for a multi-cultural gift shop.	**7**

II	**Mass vs. Prestige**	Digital Image Manipulation Applications. Playful Design	**7**
III	**Packaging Research**	Packaging Research and conceptualization Tangible Visual Marketing , Project – Soft drinks & Beverages	**8**
IV	**Packaging Forms**	Packaging Design Realization, Packaging Form and Elements.	**8**
V	**New Product Design**	Packaging Design Approaches and Techniques. Launching a New Product Design, Project - Ladies cosmetics packaging design	**8**

Text Books and References:

1. Van Roojen, P., &Hronek, J. (2010). Basic Packaging. Pepin Press.

2. Denison, E., &Ren, G. Y. (2001). packaging prototypes

3: Thinking Green (Vol. 3). RotoVision.

4. Pecht, M. (1991). Handbook of electronic package design (Vol. 76). CRC Press. style (Vol. 127). Point Roberts: Hartley & Marks.

5.Bringhurst, R. (1992). The elements of typographic style (Vol. 127). Point Roberts: Hartley & Marks.

Internal Assessment (IA) for 20 marks:
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● A total of **four questions** need to be answered

Teaching Scheme						
Course Code	**Course Name**	**(Contact Hours)**		**Credits Assigned**		
		Theory	**Studio**	**Theory**	**Studio**	**Total**
BDC403	INTERIOR LANDSCAPE DESIGN	4	--	4	--	4

Course Code	**Course Name**	**Examination Scheme**							
		Theory					**Term Work**	**Pract**	**Total**
		Internal Assessment			**End Sem Exam**	**Exam Duration (in Hrs)**			
		Test 1	**Test 2**	**Avg.**					
BDC403	INTERIOR LANDSCAPE DESIGN	20	20	20	80	3			100

Course Outcomes/Objectives									
Course Objectives									
1	To study the concepts of interior landscaping and their application in the design of interior spaces.								
2	To develop an understanding about the design of interior landscape with special emphasis on the choice and care of plant materials used in the interior spaces.								
3	To study about the various landscaping elements and their application in interior spaces.								
Course Outcome: Learner will be able to…..									
1	Select various elements of interior landscaping								
2	Understand the plant growth, health, requirements and maintenance techniques								
3	Select various elements of interior landscaping like type of water bodies, rocks, artifcts, lights,texture and colors.								
4	Select design, materials, water proofing solutions for roof & Deck Landscaping								
5	Apply knowledge to design courtyard, terrace and outer rooms.								
Sr. No.	**Module**	**Detailed Content**							**Hours**
I	INTERIOR LANDSCAPING	Definition, classification of plants, indoor plants and their functions, layout & components, Floriculture - commercial, ornamental, selection of plants & pest control.							**7**
II	PHYSICAL REQUIREMENTS OF PLANTS	Physical requirements of plants - light, temperature, water, planting medium, soil separator, weight of plants, acclimatization & maintenance. Techniques to meet physical requirements							**7**
III	INTERIOR LANDSCAPING ELEMENTS & PRINCIPLES	Various interior landscaping elements - water bodies - pools, fountains, cascades plants, rocks, artifacts, paving & lighting, design guidelines -pant texture & colour, plant height plant spacing.							**8**
IV	ROOF AND DECK LANDSCAPE	Protection of the integrity of the roof and structure, provisions for drainage, light weight planting medium, irrigation, selection of materials, water proofing, provision for utilities and maintenance.							**8**
V	EXERCISE ON INTERIOR LANDSCAPE	• Courtyard design • An outdoor room design • Terrace garden							**8**
Text Books and References:									

1. Time saver standards for landscape architecture.									
2. Planting design by Theodore D.Walker, VNR Publications New York.									
3. Landscaping Principles and Practices by Jack E. Ingels, Delmar Publishers.									

Internal Assessment (IA) for 20 marks:

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Question paper format

- Question Paper will comprise of a total of six questions each carrying 20 marks.
- Q.1 will be compulsory and should cover maximum contents of the syllabus
- **Remaining questions** will be **mixed in nature** (part (a) and part (b) of each question must be from different modules. For example, if Q.2 has part (a) from Module 3 then part (b) must be from any other Module randomly selected from all the modules)
- A total of **four questions** need to be answered

Teaching Scheme

Course Code	Course Name	(Contact Hours)		Credits Assigned		
		Theory	Studio	Theory	Studio	Total
BDC404	**Industrial Design II**	4	--	4	--	4

Course Code	Course Name	Examination Scheme			
		Theory	Term Work	Pract	Total

		Internal Assessment			End Sem Exam	Exam Duration (in Hrs)			
		Test 1	Test 2	Avg.					
BDC404	Industrial Design II	20	20	20	80	3			100

Course Outcomes/Objectives

Course Objectives	
1	To make the learner able to make innovative design solutions for industrial problems.

Course Outcome: Learner will be abl to…

1	Develop innovative designs by doing user study and need identification.
2	Do the design analysis considering usability, material analysis, visual analysis, factor analysis.
3	Develop designs solutions considering the techniques like Design for culture, design for manufacture, design for assembly, product rendering

Sr.No.	Module	Detailed Content	Hours
I	**Complex products design**	Complex products, design as a strategic tool, design and innovation, design process, user study, need identification.	**7**
II	**Sigma analysis**	Sigma analysis of user and product activity, usability, material analysis, visual analysis, factor analysis.	**7**
III	**Analysis of design factors**	Physiology analysis, technical analysis, environmental analysis, economic analysis, ideation, analogies, selection of an idea, detail design.	**8**

IV	**Design Considerations**	Design for culture, design for manufacture, design for assembly, product rendering, mock-up and prototype, final manufacture.							**8**

Text Books and References:

1. Cross, N. (2008). Engineering design methods: strategies for product design. John Wiley & Sons.

2.Whitten, J. L., Barlow, V. M., & Bentley, L. (1997). Systems analysis and design methods. McGraw-Hill Professional.

3.Cuffaro, D., &Zaksenberg, I. (2013). The Industrial Design Reference & Specification Book: Everything Industrial Designers Need to Know Every Day. Rockport Publishers

4. Krippendorff, K. (2005). The semantic turn: A new foundation for design. crc Press.

Internal Assessment (IA) for 20 marks:

IA will consist of Two Compulsory Internal Assessment Tests. Approximately 40% to 50% of syllabus content must be covered in First IA Test and remaining 40% to 50% of syllabus content must be covered in Second IA Test

Question paper format

- Question Paper will comprise of a total of six questions each carrying 20 marks.
- Q.1 will be compulsory and should cover maximum contents of the syllabus
- **Remaining questions** will be **mixed in nature** (part (a) and part (b) of each question must be from different modules. For example, if Q.2 has part (a) from Module 3 then part (b) must be from any other Module randomly selected from all the modules)
- A total of **four questions** need to be answered

Teaching Scheme

Course Code	Course Name	(Contact Hours)		Credits Assigned		
		Theory	Studio	Theory	Studio	Total
BDC405	**Communication Design -II**	2	--	2	--	2

Course Code	Course Name	Examination Scheme			
		Theory	Term Work	Pract	Total

		Internal Assessment			End Sem Exam	Exam Duration (in Hrs)			
		Test 1	Test 2	Avg.					
BDC405	Communication Design -II	20	20	20	80	3			100

Course Outcomes/Objectives	
Course Objectives	
1	The aim of this course is to make the learner aware about the application of visual design to solving communication design problems using advanced techniques.
Course Outcomes: Learner will be able to…	
1	Understand the different forms of print media and typography.
2	Understand design as applied to solving communication problems within the context of our society.
3	Understand the Identity Design.
4	Design and create user interface designs.
5	Design communication forms using videography and cinematography.

Sr. No.	Module	Detailed Content	Hours
I	**Introduction to Print Media**	Introduction to Print Media: Forms of Printing, History and Evolution Interrelation of Print and Digital Technologies, Applications. Introduction to Typography	**7**
II	**History and Evolution**	History and Evolution, Classification, Anatomy, Legibility Readability, Word mark Design, Type Design Principles, Techniques and Applications.	**7**
III	**Introduction to Identity Design**	Introduction to Identity Design, Branding and Rebranding; Applications in - Stationary Design, Template Design, Souvenir Design, Signage Design and Web Design.	**8**
IV	**User Interface Design**	Introduction to Human Computer Interface: Graphic User Interface, Characteristics, Principles and Applications.	**8**

V	**Introduction to Moving pictures:**	Introduction to Moving pictures: History and Evolution of Cinema, Video and Animation; Principles Techniques and Applications.							**8**
Text Books and References:									
1. Kipphan, H. (2001). Handbook of print media: technologies and production methods. Springer Science & Business Media.									
2. Kernan, A. B. (1987). Printing Technology, Letters, & Samuel Johnson. Princeton University Press.									
3. McLean, R. (1988). The Thames and Hudson manual of typography.									
4. Craig, J. (1990). Basic Typography: a design manual. Watson-Guptill Publications.									

Internal Assessment (IA) for 20 marks:

IA will consist of Two Compulsory Internal Assessment Tests. Approximately 40% to 50% of syllabus content must be covered in First IA Test and remaining 40% to 50% of syllabus content must be covered in Second IA Test

Question paper format

- Question Paper will comprise of a total of six questions each carrying 20 marks.
- Q.1 will be compulsory and should cover maximum contents of the syllabus
- **Remaining questions** will be **mixed in nature** (part (a) and part (b) of each question must be from different modules. For example, if Q.2 has part (a) from Module 3 then part (b) must be from any other Module randomly selected from all the modules)
- A total of **four questions** need to be answered

Teaching Scheme									
Course Code	**Course Name**	**(Contact Hours)**		**Credits Assigned**		
		Theory	**Studio**	**Theory**	**Studio**	**Total**
BDL401	**Design Research Including User Study lab**		2		1	1

Course Code	**Course Name**	**Examination Scheme**							
		Theory					**Term Work**	**Pract**	**Total**
		Internal Assessment			**End Sem Exam**	**Exam Duration (in Hrs)**			
		Test 1	**Test 2**	**Avg.**					
BDL401	Design Research Including User Study lab						25	25	50

Course Outcomes/Objectives	
Course Outcomes Learner will be able to ……	
1	Identify the qualitative and quantitative methods of research
2	Design the framework of research to develop a solution
3	Develop solutions based on references and observations
4	Use photography as effective tool to do the research
5	Portray research findings using persona, stories and scenarios

Sr. No.	**Module**	**Detailed Content**	**Hours**

I	**Research Methods**	Qualitative and quantitative research methodology,	**4**
II	**Research Tools**	Questionnaire design, validation, repeatability testing, psychophysical scales,	**4**
III	**Research Analysis**	Direct observation and activity analysis,	**4**
IV	**Photography as a tool**	Photography as a tool in design research etc	**4**
V	**Persona**	Persona, scenario, story boarding.	**4**

Note: Suggested List of Experiments is indicative. However, flexibility lies with individual course instructors to design and introduce new, innovative and challenging experiments, / Lab work (limited to maximum 30% variation to the suggested list) from within the curriculum, so that the fundamentals and applications can be explored to give greater clarity to the students and they can be motivated to think differently.

Assessment:

Distribution of marks for term work-25
Laboratory work- 20 Marks
Attendance- 05 Marks

Practical/Oral examination

1. Each student will be given a practical assignment on the basis of the above exercises which will be completed within a given time and assessed by examiners during the oral examination.

2. The distribution of marks for oral-practical examination shall be as follows:

a. Practical Assignment : 15 marks

b. Oral : 10 marks

3. Evaluation of practical/oral examination to be done based on the performance of practical assignment.

4. Students work along with evaluation report to be preserved till the next examination

Teaching Scheme						
Course Code	**Course Name**	**(Contact Hours)**		**Credits Assigned**		
		Theory	**Studio**	**Theory**	**Studio**	**Total**
BDL402	**Communication Design-II**	2	--	2	--	2

Course Code	**Course Name**	**Examination Scheme**			
		Theory	**Term Work**	**Pract**	**Total**

		Internal Assessment			End Sem Exam	Exam Duration (in Hrs)			
		Test 1	Test 2	Avg.					
BDL402	Communication Design-II						25	25	50

Course Outcomes/Objectives									
The Course Aims									
1	To develop an ability to design visual communication means for effective communication.								
2	To develop an ability to design visual communication in various forms.								
Course Outcomes: Learner will be able to ……									
1	Solve the real life problems by applying the principles of communication design.								
Sr. No.	**Module**	**Detailed Content**							**Hours**
I		The students take up a communication design challenge and solve it during the course with discussions and inputs from the faculty mentors.							

Note: Suggested List of Experiments is indicative. However, flexibility lies with individual course instructors to design and introduce new, innovative and challenging experiments, / Lab work (limited to maximum 30% variation to the suggested list) from within the curriculum, so that the fundamentals and applications can be explored to give greater clarity to the students and they can be motivated to think differently.

Text Books and References:

1. Malamed, C. (2011). Visual language for designers: principles for creating graphics that people understand. Rockport Pub.

2.Arnheim, R. (1969). Visual thinking. Univ of California Press.

3. Bertin, J. (1981). Graphics and graphic information processing. Walter de Gruyter.

4. Barry, A. M. (1997). Visual intelligence: Perception, image, and manipulation in visual communication. SUNY Press

5. Meirelles, I. (2013). Design for information: an introduction to the histories, theories, and best practices behind effective information visualizations. Rockport publishers.

Assessment:
Distribution of marks for term work-25
Laboratory work- 20 Marks
Attendance- 05 Marks

Practical/Oral examination

1. Each student will be given a practical assignment on the basis of the above exercises which will be completed within a given time and assessed by examiners during the oral examination.

2. The distribution of marks for oral-practical examination shall be as follows:

a. Practical Assignment : 15 marks

b. Oral : 10 marks

3. Evaluation of practical/oral examination to be done based on the performance of practical assignment.

4. Students work along with evaluation report to be preserved till the next examination

Teaching Scheme									
Course Code	**Course Name**	**(Contact Hours)**		**Credits Assigned**		
		Theory	**Studio**	**Theory**	**Studio**	**Total**
BDL403	**Model Making Workshop-II**	2	--	2	--	2

Course Code	**Course Name**	**Examination Scheme**							
		Theory					**Term Work**	**Pract**	**Total**
		Internal Assessment			**End Sem Exam**	**Exam Duration (in Hrs)**			
		Test 1	**Test 2**	**Avg.**					
BDL403	Model Making Workshop-II						50	50	100

Course Outcomes/Objectives	
The Course Aims	
1	To identify tools, work material and measuring instruments useful for Model making.

Course Outcomes: The learner will be able to……	
1	Gain basic working knowledge and Make models of various forms paper models.
2	Gain basic working knowledge and Make models from terracotta and clay.
3	Gain basic working knowledge and make models from plaster of paris
4	Gain basic working knowledge and make models from wood
5	Gain basic working knowledge and make models from metal

Sr.No.	**Module**	**Detailed Content**	**Hours**

I	Paper model	Paper model : Introduction to surface development method, Geometric and organic forms using surface development, origami etc	**7**
II	Terracotta and plasticine clay	Terracotta and plasticine clay : Introduction to clay as a material, tools used for clay modeling, making sculptures and other models using clay, pottery, clay throwing techniques	**7**
III	Plaster of Paris	Plaster of Paris : Working with PoP as a material, carving PoP to desired shape, Sanding and finishing PoP models.	**8**
IV	Wood	Wood : Working with wood, cutting, sanding, joineries, turning and facing operations with wood.	**8**
V	Metal	Metal : working with different types of sheet, billet and metal rods. Using tools like angle grinder and die grinder to shape metal. Basic welding techniques (arc welding, tig welding, gas welding), polishing and finishing metal surfaces.	**8**

Note: Suggested List of Experiments is indicative. However, flexibility lies with individual course instructors to design and introduce new, innovative and challenging experiments, / Lab work (limited to maximum 30% variation to the suggested list) from within the curriculum, so that the fundamentals and applications can be explored to give greater clarity to the students and they can be motivated to think differently.

Assessment:
Distribution of marks for term work-50
Laboratory work- 45 Marks
Attendance- 05 Marks

Practical/Oral examination

1. Each student will be given a practical assignment on the basis of the above exercises which will be completed within a given time and assessed by examiners during the oral examination.

2. The distribution of marks for oral-practical examination shall be as follows:

a. Practical Assignment : 30 marks

b. Oral : 20 marks

3. Evaluation of practical/oral examination to be done based on the performance of practical assignment.

4. Students work along with evaluation report to be preserved till the next examination

Teaching Scheme

Course Code	Course Name	(Contact Hours)		Credits Assigned		
		Theory	**Studio**	**Theory**	**Studio**	**Total**
BDL404	**Mini Project 1B**	--	4	--	2	2

Course Code	Course Name	Examination Scheme							
		Theory					Term Work	Pract	Total
		Internal Assessment			End Sem Exam	Exam Duration (in Hrs)			
		Test 1	Test 2	Avg.					
BDL404	Mini Project 1B						25	25	50

Course Outcomes/Objectives	
The Course Aims	
1	1. To acquaint with the process of identifying the needs and converting it into the problem.
2	2. To familiarize the process of solving the problem in a group.
3	3. To acquaint with the process of applying basic Design fundamentals to attempt solutions to the problems.
4	4. To inculcate the process of self-learning and research.
Expected Course Outcome: The students will have,	
1	Identify problems based on societal /research needs.
2	Apply Knowledge and skill to solve societal problems in a group.
3	Develop interpersonal skills to work as member of a group or leader.
4	Draw the proper inferences from available results through theoretical/ experimental/simulations.
5	Analyse the impact of solutions in societal and environmental context for sustainable development.
6	Excel in written and oral communication.
7	Demonstrate capabilities of self-learning in a group, which leads to life long learning.
8	Demonstrate project management principles during project work.

Guidelines for Mini Project

1. Students shall form a group of 3 to 4 students, while forming a group shall not be allowed less than three or more than four students, as it is a group activity.
2. Students should do survey and identify needs, which shall be converted into problem statement for mini project in consultation with faculty supervisor/head of department/internal committee of faculties.
3. Students hall submit implementation plan in the form of Gantt/PERT/CPM chart, which will cover weekly activity of mini project.
4.A log book to be prepared by each group, wherein group can record weekly work progress, guide/supervisor can verify and record notes/comments.
5. Faculty supervisor may give inputs to students during mini project activity; however, focus shall be on self-learning.
6. Students in a group shall understand problem effectively, propose multiple solution and select best possible solution in consultation with guide/ supervisor.
7. Students shall convert the best solution into working model using various components of their domain areas and demonstrate.
8. The solution to be validated with proper justification and report to be compiled in standard format of University of Mumbai.
9.With the focus on the self-learning, innovation, addressing societal problems and entrepreneurship quality development within the students through the Mini Projects, it is preferable that a single project of appropriate level and quality to be carried out in two semesters by all the groups of the students. i.e. Mini Project 1 in semester III and IV. Similarly, Mini Project 2 in semesters V and VI.
10. However, based on the individual students or group capability, with the mentor's recommendations, if the proposed Mini Project adhering to the qualitative aspects mentioned above gets completed in odd semester, then that group can be allowed to work on the extension of the Mini Project with suitable improvements/modifications or a completely new project idea in even semester. This policy can be adopted on case by case basis.
Guidelines for Assessment of Mini Project:
Term Work
1. The review/ progress monitoring committee shall be constituted by head of departments of each institute. The progress of mini project to be evaluated on continuous basis, minimum two reviews in each semester.
2. In continuous assessment focus shall also be on each individual student, assessment based on individual's contribution in group activity, their understanding and response to questions.
3. Distribution of Term work marks for both semesters shall be as below;
Marks awarded by guide/supervisor based on log book : 10
Marks awarded by review committee : 10
Quality of Project report : 05
Review/progress monitoring committee may consider following points for assessment based on either one year or half year project as mentioned in general guidelines.
One-year project:
1. In first semester entire theoretical solution shall be ready, including components/system selection and cost analysis. Two reviews will be conducted based on presentation given by students group.

-- First shall be for finalization of problem
-- Second shall be on finalization of proposed solution of problem.
2. In second semester expected work shall be procurement of component's/systems, building of working prototype, testing and validation of results based on work completed in an earlier semester.
-- First review is based on readiness of building working prototype to be conducted.
-- Second review shall be based on poster presentation cum demonstration of working model in last month of the said semester.
Half-year project:
1. In this case in one semester students' group shall complete project in all aspects including,
- Identification of need/problem
- Proposed final solution
- Procurement of components/systems
- Building prototype and testing
2. Two reviews will be conducted for continuous assessment,
- First shall be for finalization of problem and proposed solution
- Second shall be for implementation and testing of solution.
Assessment criteria of Mini Project
Mini Project shall be assessed based on following criteria;
1. Quality of survey/ need identification
2. Clarity of Problem definition based on need.
3. Innovativeness in solutions
4. Feasibility of proposed problem solutions and selection of best solution
5. Cost effectiveness
6. Societal impact
7. Innovativeness
8. Cost effectiveness and Societal impact
9. Full functioning of working model as per stated requirements
10. Effective use of skill sets
11. Effective use of standard engineering norms
12. Contribution of an individual's as member or leader
13. Clarity in written and oral communication
In one year, project, first semester evaluation may be based on first six criteria's and remaining may be used for second semester evaluation of performance of students in mini project.
In case of half year project all criteria's in generic may be considered for evaluation of performance of students in mini project.

Guidelines for Assessment of Mini Project Practical/Oral Examination:
1. Report should be prepared as per the guidelines issued by the University of Mumbai.
2. Mini Project shall be accessed through a presentation and demonstration of working model by the student project group to a panel of Internal and External Examiners preferably from industry or research organizations having experience of more than five years approved by head of Institution.
3. Students shall be motivated to publish a paper based on the work in Conferences/students competitions.
