

PROPOSED REVISED CURRICULUM for M.DES INDUSTRIAL DESIGN

CREDIT REQUIREMENTS

	Credits				
	Program Core (PC)	Program Elective (PE)	Open Elective (OE)	Training	Total Credits
1st Semester	13	-	-	-	13
2nd Semester	11	3	-	-	14
3rd Semester	6	6	-	-	12
4th Semester	9	-	3	-	12
TOTAL	39	9	3	-	51

CURRICULUM LAYOUT

Semester	Program Core	Program Elective	Other Courses
1	DIL 711. 2-0-0 (2) DIP 721. 1-0-4 (3) DIP 731. 1-0-4 (3) DIP 741 1-0-2 (2) DIL 751 2-0-2 (3)		Training course: DIR 761 Non Graded Core (S/Z Grade)
2	DIP 712. 1-0-4 (3) DIP 722 1-0-2 (2) DIL 732. 2-0-2 (3) DID 792. 0-0-6 (3)	PE-1: 3 credits	Training course: DIR 801 Non Graded Core (S/Z Grade) -
3	DID 891 0-0-12 (6)	PE-2: 3 credits PE-3: 3 credits	-
4	DID 892 0-0-18 (9)	OE-3: 3 credits	-

LIST OF CORE COURSES

S. No.	Course No.	Title	L-T-P	Credits
1	DIL 711	Framework of Design	2-0-0	2
2	DIP 721	Design and Innovation Methods	1-0-4	3
3	DIP 731	Communication and presentation skills	1-0-4	3
4	DIP 741	Product Interface & Design	1-0-2	2
5	DIL 751.	Form and Aesthetics	2-0-2	3
3	DIP 712	Computer Aided Product Detailing	1-0-4	3
7	DIP 722	Applied Ergonomics	1-0-2	2
8	DIL 732	Adv Mat Processes & Die Design	2-0-2	3
9	DID 792	Design Project1	0-0-6	3
10	DID 891	Design Project -2	0-0-12	6
11	DID 892	Industry/ Research Design Project.	0-0-18	9
Total			11-0-56	39

LIST OF TRAINING COURSES OF THIS PROGRAMME

S. No.	Course No.	Title	L-T-P	Credits
1	DIR 761.	Social Immersion :	0-0-2	S/Z Grade
2	DIR 801	Summer Internship:	0-0-4	S/Z Grade
Total			0-0-6	

LIST OF PROGRAMME ELECTIVES OF THIS PROGRAMME

S. No.	Course No.	Title	L-T-P	Credits
1	DIL 782	Design for Usability	2-0-2	3
2	DIR 832	Design for User Experience	3-0-0	3
3	DIR 862	Design in Indian Context	3-0-0	3
4	DIR 852	Strategic Design Management	2-0-2	3
5	DIR 822	Design for Sustainability	2-0-2	3
6	DIR 772	Transportation Design	2-0-2	3
7	DIV 820	Special Topics/Modules in Design	1-0-0	1
8	DIV 810	Special Topics in Design 1	3-0-0	3
9	DIV 820	Special Topics in Design 2	3-0-0	3
10	DIL 841	Design Management and Professional Practice	3-0-0	3
11	DIP 712	Exhibitions and Environmental Design	2-0-2	3
12	DIR 812	Media Studies	2-0-2	3
13	DIR 762	Vehicle Design	2-0-2	3

Semester I

S. No.	Course Number	Course Name	Type	L-T-P	Credits
1	DIL 711	Framework of Design	PC	2-0-0	2
2	DIP 721	Design and Innovation Methods	PC	1-0-4	3
3	DIP 731	Communication and presentation skills	PC	1-0-4	3
4	DIP 741	Product Interface & Design	PC	1-0-2	2
5	DIL 751.	Form and Aesthetics	PC	2-0-2	3
5	DIR 761.	Training Social Immersion : 3 Weeks in Winters	PC	0-0-2	S/Z Grade
Semester Total				7-0-14	13

Semester II

S. No.	Course Number	Course Name	Type	L-T-P	Credits
1	DIP 712	Computer Aided Product Detailing	PC	1-0-4	3
2	DIP 722	Applied Ergonomics	PC	1-0-2	2
3	DIL 732	Adv Mat Processes & Die Design	PC	2-0-2	3
4	DID 792	Design Project1	PC	0-0-6	3
5	DIR 801	Training Summer Internship: 8 Weeks in Summers	PC	0-0-4	S/Z Grade
Core Total				4-0-18	11
5	DIR 762	Vehicle Design	PE	2-0-2	3
6	DIR 772	Transportation Design	PE	2-0-2	3
7	DIL 782	Design for Usability	PE	2-0-2	3
Electives					3
Semester Total					14

Semester III

S. No.	Course Number	Course Name	Type	L-T-P	Credits
1	DID 891	Design Project -2	PC	0-0-12	6
Core Total				0-0-12	6
2	DIR 812	Media Studies	PE	2-0-2	3
3	DIR 822	Design for Sustainability	PE	2-0-2	3
4	DIR 832	Design for User Experience	PE	3-0-0	3
5	DIV 820	Special Topics/Modules in Design	PE	1-0-0	1
6	DIV 810	Special Topics in Design 1	PE	3-0-0	3
7	DIV 820	Special Topics in Design 2	PE	3-0-0	3
8	DIP 712	Exhibitions and Environmental Design	PE	2-0-2	3
9	DIL 842	Design Management and Professional Practice	PE	3-0-0	3
10	DIR 852	Strategic Design Management	PE	2-0-2	3
11	DIR 862	Design in Indian Context	PE	3-0-0	3
Electives					6
Semester Total					12

Semester IV

S. No.	Course Number	Course Name	Type	L-T-P	Credits
1	DID 892	Industry/ Research Design Project.	PC	0-0-18	9
Core Total				0-0-18	9
2		OPEN ELECTIVE	OE		3
Electives					3
Semester Total					12

M. Des Curriculum

Semester – 1 :	(L-T-P)	Credits
DIL 711. Framework of Design	2-0-0	2
DIP 721. Design and Innovation Methods	1-0-4	3
DIP 731. Communication and presentation skills	1-0-4	3
DIP 741. Product Interface & Design	1-0-2	2
DIL 751. Form and Aesthetics	2-0-2	3
 DIR 761. Social Immersion : 3 Weeks in Winters	 0-0-2	 Non Graded Core
 Semester -2 :		
DIP 712. Computer Aided Product Detailing	1-0-4	3
DIP 722. Applied Ergonomics	1-0-2	2
DIL 732. Adv Mat Processes & Die Design	2-0-2	3
DID 792. Design Project1	0-0-6	3
DIR 762, 772, 782 Program Elective 1	2-0-2	3
 DIR 801 Summer Internship: 8 Weeks in Summers	 0-0-4	 Non Graded Core
 Semester -3 :		
DID 891 Design Project -2	0-0-12	6
DIR 812, 822, 832 Program Elective 2	2-0-2	3
DIR 842, 852, 862 Program Elective 3	2-0-2	3
 Semester -4 :		
DID 892 Industry/ Research Design Project.	0-0-18	9
Open Elective	2-0-2	3
Total Program Credits		51

COURSE TEMPLATE

(Please avoid changing the number of tables, rows and columns or text in dark black, but fill only the columns relevant to the template by editing the columns in grey letters or blank columns: this would help in automating the processing of template information for curricular use)

1.	Department/Centre/School proposing the course	IDDC	
2.	Course Title	Framework of Design	
3.	L-T-P structure	2-0-0	
4.	Credits	2	Non-graded Units Please fill appropriate details in S. No. 21
5.	Course number	DIL 711	
6.	Course Status (Course Category for Program) JDS		
	Institute Core for all UG programs	(No)	
	Programme Linked Core for:		
	Departmental Core for:		
	Departmental Elective for:		
	Minor Area / Interdisciplinary Specialization Core for:		
	Minor Area / Interdisciplinary Specialization Elective for:		
	Programme Core for:	JDS	
	Programme Elective for:		
	Open category Elective for all other programs (No if Institute Core)	(Yes)	

7.	Pre-requisite(s)	
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8.	Status vis-à-vis other courses		
	8.1 List of courses precluded by taking this course (significant overlap)		
	(a)	Significant Overlap with any UG/PG course of the Dept./Centre/ School	
	(b)	Significant Overlap with any UG/PG course of other Dept./Centre/ School	
	8.2 Supersedes any existing course		DIL 711

9.	Not allowed for	
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10.	Frequency of offering (check one box)	☐ Every semester ☒ I sem ☐ II sem ☐ Either semester
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11.	Faculty who will teach the course (Dr. Jyoti Kumar and Sh. Sumer Singh)
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12.	Will the course require any visiting faculty?	(no)
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13.	Course objectives (about 50 words. "On successful completion of this course, a student should be able to..."): Explain the nature problem solving in design practice, the process of solving problems and the success criteria for 'good design'. Understand the role of culture, technology, business, user, marketing, production system on the design outcome.
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14.	Course contents (about 100 words; Topics to appear as course contents in the Courses of Study booklet) (Include Practical / Practice activities): Definition of design as an industrial and social activity. Understanding of 'design' as a noun and as a verb. Design as a case of ill structured, ill defined, ill constrained problem solving. Comparative study of production processes in art, engineering and design. Design as cycle of analysis, synthesis, and validation of ideas. Design as the meeting point of the user needs, technology affordance and business goals. History of art and design. Influence of society and culture on design. Study of successful and failed products. Study of evolution of designed products. Consideration of
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	advertising, marketing, consumer satisfaction, prevalent expertise, economic viability, production ecosystem, future prediction, legal and statutory concerns, IPR issues in design success.
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15. Lecture Outline(with topics and number of lectures)

Module no.	Topic	No. of hours (not exceeding 5h per topic)
1	Defining design as an activity	4
2	Role of users, technology and business in defining design outcomes	4
3	Methods of analysis, synthesis and evaluation	4
4	Culture and design	4
5	Methods to understand user needs	4
6	History of art and design	4
7	Advertising, marketing, legal ecosystem etc. as influence on products	4
Total Lecture hours(14 times 'L')		28

16. Brief description of tutorial activities:

Module no.	Description	No. of hours
Total Tutorial hours(14 times 'T')		

17. Brief description of Practical / Practice activities

Module no.	Description	No. of hours
Total Practical / Practice hours(14 times 'P')		

18. Brief description of module-wise activities pertaining to self-learning component (Only for 700 / 800 level courses) (Include topics that the students would do self-learning from books / resource materials: Do not Include assignments / term papers etc.)

Module no.	Description
1	Study of “How designers think” by Brian Lawson

2	Study of “Sciences of the Artificial” by Herbert A Simon
3	Study of “Design of Everyday things”, “Emotional Design” and “Design of Future Things” by Don Norman
4	Study of book ‘design for real world’ by Victor Papanek
(The volume of self-learning component in a 700-800 level course should typically be 25-30% of the volume covered in classroom contact)	

19. Suggested texts and reference materials

STYLE: Author name and initials, Title, Edition, Publisher, Year.

H.A. Simon, Sciences of the Artificial, MIT Press, 1969.
 Victor Papanek, Design for real world, Academy Chicago, 1984.
 Don Norman, Design of everyday things, Doubleday Business, 1990.
 Brian Lawson, How designers think, 4 edition, Routledge, 2005.

20. Resources required for the course (itemized student access requirements, if any)

20.1	Software	Name of software, number of licenses, etc.
20.2	Hardware	Nature of hardware, number of access points, etc.
20.3	Teaching aids (videos, etc.)	Description, Source , etc.
20.4	Laboratory	Type of facility required, number of students etc.
20.5	Equipment	Type of equipment required, number of access points, etc.
20.6	Classroom infrastructure	Seating and sketching facilities for 40 students
20.7	Site visits	Visit to craft museums, consumer electronics companies once during the course
20.8	Others (please specify)	

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21. Design content of the course(Percent of student time with examples, if possible)

21.1	Design-type problems	Eg. 25% of student time of practical / practice hours: sample Circuit Design exercises from industry
21.2	Open-ended problems	
21.3	Project-type activity	
21.4	Open-ended laboratory work	
21.5	Others (please specify)	

Date:

(Signature of the Head of the Department/ Centre / School)

Date of Approval of Template by Senate	
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COURSE TEMPLATE

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1.	Department/Centre/School proposing the course	M.Des. (Industrial Design), IDDC		
2.	Course Title	Design and Innovation Methods		
3.	L-T-P* structure	1-0-4 (*Please read Studios in place of Practicals)		
4.	Credits	3	Non-graded Units	Please fill appropriate details in S. No. 21
5.	Course number	DIP 721		
6.	Course Status (Course Category for Program) DI			
	Institute Core for all UG programs		Yes	
	Programme Linked Core for:			
	Departmental Core for:		M.Des(Industrial Design)	
	Departmental Elective for:			
	Minor Area / Interdisciplinary Specialization Core for:		All Departments	
	Minor Area / Interdisciplinary Specialization Elective for:		All Departments	
	Programme Core for:		M.Des(Industrial Design)	
	Programme Elective for:		All Departments	
	Open category Elective for all other programs (No if Institute Core)		Yes	

7.	Pre-requisite(s)	Nil
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8.	Status vis-à-vis other courses		
	8.1 List of courses precluded by taking this course (significant overlap)		
	(a)	Significant Overlap with any UG/PG course of the Dept./Centre/ School	
	(b)	Significant Overlap with any UG/PG course of other Dept./Centre/ School	
	8.2 Supersedes any existing course		DIP 721

9.	Not allowed for	None
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10.	Frequency of offering (check one box)	☐ Every semester ☒ I sem ☐ II sem ☐ Either semester
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11.	Faculty who will teach the course	S.K.Atreya, Sumer Singh, Jyoti Kumar
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12.	Will the course require any visiting faculty?	No
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13.	Course objectives (about 50 words. "On successful completion of this course, a student should be able to..."): To develop courage amongst young designers to think and design creatively in order to develop innovative products. To be able to develop their own methods.
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14.	Course contents (about 100 words; Topics to appear as course contents in the Courses of Study booklet) (Include Practical / Practice activities): 1. Understanding of factors that directly or indirectly influence the product definition and its context. Assessing relevance of available products in the futuristic context. 2. Research planning strategies, finding real challenges, Methods of Exploring design situations, developing questionnaires for interviewing users. 3. Searching for visual inconsistencies, 4. Creativity methods, Brainstorming, Syntectics, 5.Issue Tree, Mind Mapping, 6.Story Boarding, Image boarding 7.Six-Thinking Hats, Harvey Cards, Lotus Blossom, COCD, 8.Lateral Thinking, Wishful Thinking. 9. Specification writing, 10.Methods of exploring problem structure, Product-environment and Product-component interaction, 11.Alexanders method of determining components, 12.Interaction Matrix and net, 13.Analysis of interconnected decision areas, System innovation, 14.Functional Innovation by boundary shifting, through boundary searching and experimentation.
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15. Lecture Outline(with topics and number of lectures)

Module no.	Topic	No. of hours
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		(not exceeding 5h per topic)
1	1. Understanding of factors that directly or indirectly influence the product definition and its context. Assessing relevance of available products in the futuristic context.	2
2	2. Research planning strategies, finding real challenges, Methods of Exploring design situations, developing questionnaires for interviewing users.	2
3	3. Searching for visual inconsistencies,	1
4	4. Creativity methods, Brainstorming, Synectics, 5.Issue Tree, Mind Mapping, 6.Story Boarding, Image boarding 7.Six-Thinking Hats, Harvey Cards, Lotus Blossom, COCD, 8.Lateral Thinking, Wishful Thinking.	4
5	9. Specification writing	1
6	10.Methods of exploring problem structure, Product-environment and Product-component interaction, 11.Alexanders method of determining components, 12.Interaction Matrix and net,	2
7	13.Analysis of interconnected decision areas, System innovation, 14.Functional Innovation by boundary shifting, through boundary searching and experimentation.	2
Total Lecture hours(14 times 'L')		14

16. Brief description of tutorial activities:

Module no.	Description	No. of hours
Total Tutorial hours(14 times 'T')		

17. Brief description of Practical / Practice activities

Module no.	Description	No. of hours
1	Design research, need analysis, exploring problem structure	12
2	User studies in groups	12
3	Using Creativity Methods	16
4	Live exercises and projects	16
Total Practical / Practice hours(14 times 'P')		56

18. Brief description of module-wise activities pertaining to self-

learning component (Only for 700 / 800 level courses) (Include topics that the students would do self-learning from books / resource materials: Do not Include assignments / term papers etc.)

Module no.	Description
1	Design theory
2	Design methods used by craftsmen and by designers
3	Exploring possibility of new methods
(The volume of self-learning component in a 700-800 level course should typically be 25-30% of the volume covered in classroom contact)	

19. Suggested texts and reference materials

STYLE: Author name and initials, Title, Edition, Publisher, Year.

Text Book:

John Christopher Jones – “Design Methods – Seeds of Human Futures”

Reference Books:

Thomas T. Woodson – “Introduction to Engineering Design”

John R. Dixon – “Design Engineering – Inventiveness, Analysis and Decision Making”

Vijay Gupta and P.N.Murthy – “An Introduction to Engineering Design Methods”

Dilip Mukherjia – “Unleashing Genius” and “Building Brainpower”

Readings:

Victor Papanek – “Why things don’t work”

Victor Papanek – “Design for human scale”

Granada London – “How Things Work – the universal Encyclopedia of Machines”

Virender Kapoor – “Jugad – How ordinary people become extraordinarily successful”

Jeff Dyer, Hal Gregersen, Clayton M. Christensen – “The Innovator’s DNA”

Harvard Business School - “Fostering Creativity”

John Mason – “The impossible is possible”

Edward D. Bono – “Lateral Thinking”

Osborn A.F. – “Higher-Order Thinking Skills to Develop 21st Century Learners”

20. Resources required for the course (itemized student access requirements, if any)

20.1	Software	AutoCAD & Alias Studio by Autodesk
20.2	Hardware	Model making in various materials
20.3	Teaching aids (videos, etc.)	Slides, Video
20.4	Laboratory	Camera, Video, Model making
20.5	Equipment	Model making workshop
20.6	Classroom infrastructure	Video Projector, interactive board
20.7	Site visits	Visits to see craft and Industry, Group size about 40 students
20.8	Others (please specify)	Interviewing users of various products.

21. Design content of the course(Percent of student time with examples, if possible)

21.1	Design-type problems	30 % Studying Problems of the society and Industry to develop innovative products.
21.2	Open-ended problems	10% Finding problems of Craftsmen, Labors, doctors and other professionals.
21.3	Project-type activity	50% Design of Products, Prototyping
21.4	Open-ended laboratory work	10% Sketching, shaping, forming
21.5	Others (please specify)	

Date:

(Signature of the Head of the Department/ Centre / School)

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1.	Department/Centre/School proposing the course	IDDC	
2.	Course Title	Communication and Presentation Skills	
3.	L-T-P structure	1-0-4	
4.	Credits	3	Non-graded Units
5.	Course number	DIP 731	
6.	Course Status (Course Category for Program) Core		
	Institute Core for all UG programs	(No)	
	Programme Linked Core for:		
	Departmental Core for:		
	Departmental Elective for:		
	Minor Area / Interdisciplinary Specialization Core for:		
	Minor Area / Interdisciplinary Specialization Elective for:		
	Programme Core for:	M.Des	
	Programme Elective for:		
	Open category Elective for all other programs (No if Institute Core)	(Yes)	

7.	Pre-requisite(s)	None
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8.	Status vis-à-vis other courses		
	8.1 List of courses precluded by taking this course (significant overlap)		
	(a)	Significant Overlap with any UG/PG course of the Dept./Centre/ School	
	(b)	Significant Overlap with any UG/PG course of other Dept./Centre/ School	
	8.2 Supersedes any existing course		DIP 751

9.	Not allowed for	UG Students
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10.	Frequency of offering (check one box)	☐ Every semester ☒ I sem ☐ II sem ☐ Either semester
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11.	Faculty who will teach the course : Sumer Singh, S.K.Atrey, Jyoti Kumar
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12.	Will the course require any visiting faculty?	(no)
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13.	Course objectives (about 50 words. "On successful completion of this course, a student should be able to..."): To develop Knowledge and skills amongst the aspiring designers for communication of their ideas to other individual (s) through physical representations. These representations can be in the form of sketches and renderings, Physical model making through frugal resources, recording and presentation through a photo / video shoot, etc.
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14.	Course contents (about 100 words; Topics to appear as course contents in the Courses of Study booklet) (Include Practical / Practice activities): Concept of sketching for designers, sketching through geometrical shapes, Sketching in isometric grids, sculpting conceptual objects while sketching through cuboids. The use of shade and shadows, Rendering, physical product modeling through frugal materials and by the use of MDF, HIPS, Vacuum forming, modeling in FRP, product photography, video recording for presentations.
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15. Lecture Outline(with topics and number of lectures)

Module no.	Topic	No. of hours (not exceeding 5h per topic)
1	Introduction Concept sketching for designers	1
2	Sketching through Geometrical shapes	2
3	Sketching in Isometric Grids	1
4	Sculpting conceptual objects while sketching through cuboids	4
5	Shade and shadows, Rendering	2
6	Physical product modeling through frugal methods	2
7	Product photography	1
8	Video recording and presentations	1
Total Lecture hours (14 times 'L')		14

16. Brief description of tutorial activities:

Module no.	Description	No. of hours
Total Tutorial hours (14 times 'T')		

17. Brief description of Practical / Practice activities

Module no.	Description	No. of hours
1	Fundamentals of sketching, Lines, curves, etc	4
2	Sketching through Geometrical shapes	8
3	Sketching in Isometric Grids	4
4	Sculpting conceptual objects while sketching through cuboids	16
5	Shade and shadows, Rendering	8
6	Physical product modeling through frugal methods	8
7	Product photography	4
8	Video recording and presentations	4
Total Practical / Practice hours (14 times 'P')		56

18. Brief description of module-wise activities pertaining to self-learning component

(Only for 700 / 800 level courses) (Include topics that the students would do self-learning from books / resource materials: Do not Include assignments / term papers etc.)

Module no.	Description
(The volume of self-learning component in a 700-800 level course should typically be 25-30% of the volume covered in classroom contact)	

19. Suggested texts and reference materials

STYLE: Author name and initials, Title, Edition, Publisher, Year.

Betty Edwards, New Drawing on the Right Side of the Brain, Tarcher/Penguin, 2012

Francis D K Ching Frank Ching, Drawing: A Creative Process, John Wiley & Sons Inc, 1989

Koos Eissen, Roselien Steur, Sketching: Drawing Techniques for Product Designers, , Bis B.V., Uitgeverij(BIS publishers), 2007

Navi Radjou, Simone Ahuja, Jaideep Prabhu, Jugaad Innovation: A frugal and flexible approach to innovation for the 21st century, Random Business, 2012

Allison Earnest, Specifications of Lighting for Product Photography, Amherst Media, 2012

20. Resources required for the course (itemized student access requirements, if any)

20.1	Software	Photoshop, CorelDraw, In design, Adobe Illustrator
20.2	Hardware	Computers / Touch screen monitors
20.3	Teaching aids (videos, etc.)	Projectors, Audio visual systems
20.4	Laboratory	Markers lab for product rendering, tinkering lab for quick and dirty prototype
20.5	Equipment	Hand tools, power tools, Aerosol color sprays
20.6	Classroom infrastructure	Studio space for 20 students (1.5 meter X .5 meter table per student)
20.7	Site visits	Design Studios
20.8	Others (please specify)	

21. Design content of the course (Percent of student time with examples, if possible)

21.1	Design-type problems	60 % of students time should go in practice sessions to hone sketching and rendering skills
21.2	Open-ended problems	20% of student time should go in participating in a concept design competitions
21.3	Project-type activity	20% of students time should go in learning skills of recording through photography and video and making a presentation
21.4	Open-ended laboratory work	
21.5	Others (please specify)	

Date:

(Signature of the Head of the Department/ Centre / School)

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1.	Department/Centre/School proposing the course	M.Des. (Industrial Design), IDDC		
2.	Course Title	Product Interface Design		
3.	L-T-P* structure	1-0-2 (*Please read STUDIOS and not Practicals)		
4.	Credits	2	Non-graded Units	Nil
5.	Course number	DIP 741		
6.	Course Status (Course Category for Program) DI			
	Institute Core for all UG programs		(No)	
	Programme Linked Core for:			
	Departmental Core for:		M.Des(Industrial Design)	
	Departmental Elective for:			
	Minor Area / Interdisciplinary Specialization Core for:			
	Minor Area / Interdisciplinary Specialization Elective for:			
	Programme Core for:		M.Des(Industrial Design)	
	Programme Elective for:			
	Open category Elective for all other programs (No if Institute Core)		Yes	

7.	Pre-requisite(s)	Nil
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8.	Status vis-à-vis other courses		
	8.1	List of courses precluded by taking this course (significant overlap)	(course number)
	(a)	Significant Overlap with any UG/PG course of the Dept./Centre/ School	
	(b)	Significant Overlap with any UG/PG course of other Dept./Centre/ School	(course number)
	8.2	Supersedes any existing course	(course number)

9.	Not allowed for	Any other student other than M.Des
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10.	Frequency of offering (check one box)	☐ Every semester ☒ Isem ☐ II sem ☐ Either semester
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11.	Faculty who will teach the course S.K.Atreja, Sumer Singh, Jyoti Kumar
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12.	Will the course require any visiting faculty?	(No)
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13.	Course objectives (about 50 words. "On successful completion of this course, a student should be able to..."): Objective: To acquire Analysis, Synthesis and Presentation experience in design of products of varying types. Model making exercises in different materials and processes.
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14.	Course contents (about 100 words; Topics to appear as course contents in the Courses of Study booklet) (Include Practical / Practice activities):1. A product as a living organism, its interface externally with the environment and internally with its components. 2. Interface for modulating user involvement. 3. Product Semantics, communication of feelings, 4.Communication of structure and purpose. 5. Communication through form, color, graphics and text. 6. Typography choice and readability, Printing and Transfer Techniques. 7. Product graphics. 8. Functioning of controls and display elements, knobs, push buttons, handles and electronic displays. 9. Investigation and study of visual, functional and ergonomic requirements of controls and displays, legibility of display elements. 10. Study of different textures, patterns and materials. 11. Area, volume and Proportion. 12. Order and system. 13. Human factors and safety in interface design. 14.Individually planned design projects involving research analysis and design of product interface.
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15. Lecture Outline(with topics and number of lectures)

Module no.	Topic	No. of hours (not exceeding 5h per topic)
1	1. A product as a living organism, its interface externally with the environment and internally with its components. 2. Interface for modulating user involvement.	2
2	3. Product Semantics, communication of feelings, 4.Communication of structure and purpose. 5. Communication through form, color, graphics and text.	3
3	6. Typography choice and readability, Printing and Transfer Techniques. 7. Product graphics.	1
4	8. Functioning of controls and display elements, knobs, push buttons, handles and electronic displays. 9. Investigation and study of visual, functional and ergonomic requirements of controls and displays, legibility of display elements.	3
5	10. Study of different textures, patterns and materials. 11. Area, volume and Proportion. 12. Order and system. 13. Human factors and safety in interface design.	3
6	14. Individually planned design projects involving research analysis and design of product interface.	2
Total Lecture hours(14 times 'L')		14

16. Brief description of tutorial activities:

Module no.	Description	No. of hours
Total Tutorial hours(14 times 'T')		

17. Brief description of Practical / Practice activities

Module no.	Description	No. of hours
1	Product interface externally with the environment and internally with its components, product as a living organism. Involvement of the user.	4
2	Exercises in product semantics, communication of feelings, communication of structure and purpose through form, color, graphics and text.	4
3	Typography choice and readability, Printing and Transfer Techniques, Product graphics.	2
4	Functioning of controls and display elements, knobs, push buttons, handles and electronic displays. Investigation and study of visual, functional and ergonomic requirements of controls and displays, legibility of display elements.	4
5	Study of different textures, patterns and materials; Area, volume and Proportion; Order and system; Human factors and safety in interface design.	2
6	Live exercises and projects	12
Total Practical / Practice hours(14 times 'P')		28

18. Brief description of module-wise activities pertaining to self-learning component

(Only for 700 / 800 level courses) (Include topics that the students would do self-learning from books / resource materials: Do not Include assignments / term papers etc.)

Module no.	Description
1	Order in nature. Product, components, environment, user
2	Communication of feelings through product form, color, texture, graphics etc.
3	Finding real life challenges and solving them by product design.
(The volume of self-learning component in a 700-800 level course should typically be 25-30% of the volume covered in classroom contact)	

19. Suggested texts and reference materials

STYLE: Author name and initials, Title, Edition, Publisher, Year.

Reference Books: Lynn Haller and Cheryl Dangel Cullen, Industrial Designers Society of America “50 Real-Life Product Design Projects Uncovered” . Rowenna Read – “Form Design” Granada london – “How Things Work – the universal Encyclopedia of Machines” Victor Papanek – “Why things don’t work” Readings: Victor Papanek – “Design for human scale” Design Standards of various products and countries such as BIS Patents in India, UK, USA, Japan, Germany and other countries

20. Resources required for the course (itemized student access requirements, if any)

20.1	Software	AutoCAD & Alias Studio by Autodesk
20.2	Hardware	Model making in various materials
20.3	Teaching aids (videos, etc.)	Slides, Video
20.4	Laboratory	Camera, Video, Model making
20.5	Equipment	Model making workshop
20.6	Classroom infrastructure	Video Projector, interactive board
20.7	Site visits	Visits to see exhibitions, design studios, cultural and religious centres to study semantics and user expectations, Group size about 40 students
20.8	Others (please specify)	Talking to various designers.

21. Design content of the course(Percent of student time with examples, if possible)

21.1	Design-type problems	50 % Studying challenges of the real life and to develop products as solutions.
21.2	Open-ended problems	
21.3	Project-type activity	30% Design of Products
21.4	Open-ended laboratory work	20% Sketching, shaping, forming, Rapid prototyping
21.5	Others (please specify)	

Date:

(Signature of the Head of the Department/ Centre / School)

Date of Approval of Template by Senate	
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COURSE TEMPLATE

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1.	Department/Centre/School proposing the course	IDDC	
2.	Course Title	Form and Aesthetics	
3.	L-T-P structure	2-0-2	
4.	Credits	3	Non-graded Units
5.	Course number	DIP 741	
6.	Course Status (Course Category for Program) Core		
	Institute Core for all UG programs		(No)
	Programme Linked Core for:		
	Departmental Core for:		
	Departmental Elective for:		
	Minor Area / Interdisciplinary Specialization Core for:		
	Minor Area / Interdisciplinary Specialization Elective for:		
	Programme Core for:		M.Des
	Programme Elective for:		
	Open category Elective for all other programs (No if Institute Core)		(Yes)

7.	Pre-requisite(s)	None
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8.	Status vis-à-vis other courses		
	8.1 List of courses precluded by taking this course (significant overlap)		
	(a)	Significant Overlap with any UG/PG course of the Dept./Centre/ School	
	(b)	Significant Overlap with any UG/PG course of other Dept./Centre/ School	
	8.2 Supersedes any existing course		DIP 741, DIP 841

9.	Not allowed for	UG Students
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10.	Frequency of offering (check one box)	☐ Every semester ☒ I sem ☐ II sem ☐ Either semester
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11.	Faculty who will teach the course :	Sumer Singh, S.K.Atrey, Jyoti Kumar
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12.	Will the course require any visiting faculty?	(no)
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13.	Course objectives (about 50 words. "On successful completion of this course, a student should be able to..."): Create a sensitivity towards form and aesthetics in products. Develop an understanding of form through knowledge of form based designs. able to translate form into a product working with design constraints.
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14.	Course contents (about 100 words; Topics to appear as course contents in the Courses of Study booklet) (Include Practical / Practice activities): Elements of design, Nature inspired design, Gestalt, Product semantics, Color theory and color trends, Varied approaches for form, Product styling, case studies and design discourse on form, exercises on from development of a product (existing or conceptual).
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15. Lecture Outline(with topics and number of lectures)

Module no.	Topic	No. of hours (not exceeding 5h per topic)
1	Form and aesthetics, the need and a designers approach	2
2	Elements of Design	2
3	Nature Inspired Design	2
4	Form and Detailing Aesthetics	2
5	Color theory and color trends	4
6	Product styling	8
7	Varied approaches for form design	4
8	Case studies	4
Total Lecture hours (14 times 'L')		28

16. Brief description of tutorial activities:

Module no.	Description	No. of hours
Total Tutorial hours (14 times 'T')		

17. Brief description of Practical / Practice activities

Module no.	Description	No. of hours
1	Sensitization towards beauty and aesthetics	2
2	Practical sessions on understanding of forms	4
3	Colour chart and colour forecasting	2
4	Image board , Mood board and form extraction	4
5	Exercises for form from different sources	4
6	Project on form application on an object	12
Total Practical / Practice hours (14 times 'P')		28

18. Brief description of module-wise activities pertaining to self-learning component

(Only for 700 / 800 level courses) (Include topics that the students would do self-learning from books / resource materials: Do not Include assignments / term papers etc.)

Module no.	Description
(The volume of self-learning component in a 700-800 level course should typically be 25-30% of the volume covered in classroom contact)	

19. Suggested texts and reference materials

STYLE: Author name and initials, Title, Edition, Publisher, Year.

Gail Greet Hannah, Elements of Design, Princeton Architectural Pr, 2002
Peter Fiell, Charlotte, Design of 20th century, Taschen America Llc, 2012
Allen Hurlburt Hurlburt, Grid: A Modular System for the Design and Production of Newspapers, Magazines, and Books, John Wiley & Sons, 1982
Kimberly Elam, Geometry of Design, Princeton Architectural Pr, 2011
Mugge Ruth, Emotional Bonding with Products, Vdm Verlag Dr. Mueller E.k, 2008

20. Resources required for the course (itemized student access requirements, if any)

20.1	Software	Photoshop, Indesign, Adobe Illustrator, MS office
20.2	Hardware	Computer workstations, Touch screen monitors,
20.3	Teaching aids (videos, etc.)	Projectors, Audio visual systems
20.4	Laboratory	Tinkering Lab, Plaster of parris.
20.5	Equipment	Type of equipment required, number of access points, etc.
20.6	Classroom infrastructure	Tables for model making, for 20 students (10 tables, 1meter x 1meter)
20.7	Site visits	Visit to urban and rural setup , to get design sensitivity
20.8	Others (please specify)	design library of products with remarkable form and aesthetics

21. Design content of the course (Percent of student time with examples, if possible)

21.1	Design-type problems	40 % of student time should go in form appreciation and bend towards aesthetics as a significant element on design.
21.2	Open-ended problems	20% of student time should go understanding case studies of form application
21.3	Project-type activity	40% of students time should go in transferring a form extraction to a product
21.4	Open-ended laboratory work	
21.5	Others (please specify)	

Date:

(Signature of the Head of the Department/ Centre / School)

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1.	Department/Centre/School proposing the course	IDDC		
2.	Course Title	Social Immersion		
3.	L-T-P structure	0-0-2		
4.	Credits		Non-graded Units	1
5.	Course number	DIR 761		
6.	Course Status (Course Category for Program) Core			
	Institute Core for all UG programs			(No)
	Programme Linked Core for:			
	Departmental Core for:			
	Departmental Elective for:			
	Minor Area / Interdisciplinary Specialization Core for:			
	Minor Area / Interdisciplinary Specialization Elective for:			
	Programme Core for:			M.Des
	Programme Elective for:			
	Open category Elective for all other programs (No if Institute Core)			(Yes)

7.	Pre-requisite(s)	None
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8.	Status vis-à-vis other courses		
	8.1 List of courses precluded by taking this course (significant overlap)		
	(a)	Significant Overlap with any UG/PG course of the Dept./Centre/ School	
	(b)	Significant Overlap with any UG/PG course of other Dept./Centre/ School	
	8.2 Supersedes any existing course		None

9.	Not allowed for	UG Students
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10.	Frequency of offering (check one box)	☐ Every semester ☒ I sem ☐ II sem ☐ Either semester
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11.	Faculty who will teach the course : Sumer Singh, S.K.Atrey, Jyoti Kumar
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12.	Will the course require any visiting faculty?	(no)
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13.	Course objectives (about 50 words. "On successful completion of this course, a student should be able to..."): Sensitize the design students towards society by exposing them to address societal issues.
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14.	Course contents (about 100 words; Topics to appear as course contents in the Courses of Study booklet) (Include Practical / Practice activities): Documentation of societal issues through photography, recordings, sketches. Identification of locale of working, Identification of a potential societal issue. presenting the societal issues as a report/presentation/ video.
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15. Lecture Outline(with topics and number of lectures)

Module no.	Topic	No. of hours (not exceeding 5h per topic)
1		
2		
3		
4		
5		
6		
7		
8		
Total Lecture hours (14 times 'L')		

16. Brief description of tutorial activities:

Module no.	Description	No. of hours
Total Tutorial hours (14 times 'T')		

17. Brief description of Practical / Practice activities

Module no.	Description	No. of hours
1	Brief for social Immersion & Identification of locale	14
2	Communication of agenda and report writing	14
3		
4		
Total Practical / Practice hours (14 times 'P')		28

18. Brief description of module-wise activities pertaining to self-learning component (Only for 700 / 800 level courses) (Include topics that the students would do self-learning from books / resource materials: Do not Include assignments / term papers etc.)

Module no.	Description
(The volume of self-learning component in a 700-800 level course should typically be 25-30% of the volume covered in classroom contact)	

19. Suggested texts and reference materials

STYLE: Author name and initials, Title, Edition, Publisher, Year.

C.K.Prahalad, The Fortune at The Bottom of The Pyramid, Pearson India, 2013

By P.John Clarkson, Roger Coleman, Simeon Keates, Cherie Lebbon, Inclusive Design: Design for the Whole Population, Springer , 2003

20. Resources required for the course (itemized student access requirements, if any)

20.1	Software	Name of software, number of licenses, etc.
20.2	Hardware	Nature of hardware, number of access points, etc.
20.3	Teaching aids (videos, etc.)	Description, Source , etc.
20.4	Laboratory	Type of facility required, number of students etc.
20.5	Equipment	Type of equipment required, number of access points, etc.
20.6	Classroom infrastructure	Type of facility required, number of students etc.
20.7	Site visits	Type of Industry/ Site, typical number of visits, number of students etc.
20.8	Others (please specify)	

21. Design content of the course (Percent of student time with examples, if possible)

21.1	Design-type problems	60 % of students time should go immersion (understanding of the societal issues.
21.2	Open-ended problems	20% of student time should go in suggesting solutions to the identified societal issue
21.3	Project-type activity	20% of students time should go recording and presentations.
21.4	Open-ended laboratory work	
21.5	Others (please specify)	

Date:

(Signature of the Head of the Department/ Centre / School)

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1.	Department/Centre/School proposing the course	M.Des. (Industrial Design), IDDC		
2.	Course Title	Computer Aided Product Detailing		
3.	L-T-P* structure	1-0-4 (*Please read STUDIOS and not Practicals)		
4.	Credits	3	Non-graded Units	Please fill appropriate details in S. No. 21
5.	Course number	DIP 712		
6.	Course Status (Course Category for Program) DI			
	Institute Core for all UG programs		(No)	
	Programme Linked Core for:			
	Departmental Core for:		M.Des . (Industrial Design)	
	Departmental Elective for:			
	Minor Area / Interdisciplinary Specialization Core for:		All Departments	
	Minor Area / Interdisciplinary Specialization Elective for:		All Departments	
	Programme Core for:		M.Des . (Industrial Design)	
	Programme Elective for:		All Departments	
	Open category Elective for all other programs (No if Institute Core)		Yes	

7.	Pre-requisite(s)	Nil
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8.	Status vis-à-vis other courses		
	8.1 List of courses precluded by taking this course (significant overlap)		
	(a)	Significant Overlap with any UG/PG course of the Dept./Centre/ School	
	(b)	Significant Overlap with any UG/PG course of other Dept./Centre/ School	
	8.2 Supersedes any existing course		

9.	Not allowed for	None
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10.	Frequency of offering (check one box)	☐ Every semester ☐ I sem ☒ II sem ☐ Either semester
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11.	Faculty who will teach the course	S.K.Atreya, Sumer Singh, Jyoti Kumar
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12.	Will the course require any visiting faculty?	(No)
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13.	Course objectives (about 50 words. "On successful completion of this course, a student should be able to..."): To learn the use of computers as a tool in product design. Handling Product design task, and communication of designs using CAD.
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14.	Course contents (about 100 words; Topics to appear as course contents in the Courses of Study booklet) (Include Practical / Practice activities): 1. Introduction to computer aided industrial design. 2. The technique of concurrent engineering. 3. Using databases for material selection, Structure of CAD programs and hardware. 4. Introduction to surface modelling. 5. Detailed study of surface modelling software, 6.Studio Exercises in Surface modelling applications. 7. Drawing, 8.Surfaceing, Modelling, 9.Editing, &. Advanced Editing, 10.Shading, 11.Lighting, 12.Texturing, 13.Backgrounds, Environments, 14.Animation techniques and product Animation.
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15. Lecture Outline(with topics and number of lectures)

Module no.	Topic	No. of hours (not exceeding 5h per topic)
1	1. Introduction to computer aided industrial design. 2. The technique of concurrent engineering. 3. Using databases for material selection, Structure of CAD programs and hardware.	1
2	4. Introduction to surface modelling. 5. Detailed study of surface modelling software,	1
3	6.Studio Exercises in Surface modelling applications. 7. Drawing, 8.Surfacing, Modelling,	5
4	9.Editing, &. Advanced Editing,	5
5	10.Shading, 11.Lighting, 12.Texturing,13.Backgrounds, Environments,	1
6	14.Animation techniques and product Animation.	1
Total Lecture hours(14 times 'L')		14

16. Brief description of tutorial activities:

Module no.	Description	No. of hours
Total Tutorial hours(14 times 'T')		

17. Brief description of Practical / Practice activities

Module no.	Description	No. of hours
1	CAD, concurrent engineering, databases for material selection, Structure of CAD programs and hardware.	4
2	Surface modelling	4
3	Studio Exercises, Drawing, 8.Surfacing, Modelling,	16
4	Editing, &. Advanced Editing,.	12
5	Shading, Lighting, Texturing, Backgrounds, Environments	16
6	Animation techniques and product Animation.	4
Total Practical / Practice hours(14 times 'P')		56

18. Brief description of module-wise activities pertaining to self-learning component

(Only for 700 / 800 level courses) (Include topics that the students would do self-learning from books / resource materials: Do not Include assignments / term papers etc.)

Module no.	Description
1	Study of CAD & Surface modellers
2	CAD exercises in product design
3	Texturing, shading, animation
(The volume of self-learning component in a 700-800 level course should typically be 25-30% of the volume covered in classroom contact)	

19. Suggested texts and reference materials

STYLE: Author name and initials, Title, Edition, Publisher, Year.

Text Book:

Autodesk Press – “Designing with Alias Design Studio”

Autodesk Proess – “Inside 3D Studio”

Reference Books:

Publications by Autodesk University and CAD forums on internet.

Granada london – “How Things Work – the universal Encyclopedia of Machines”

Victor Papanek – “Why things don’t work”

Readings:

Time Saver Standards

BIS and International Standards

Indian, UK, USA, and other international Patents

20. Resources required for the course (itemized student access requirements, if any)

20.1	Software	Mud Box, 3D Studio, and Alias Studio
20.2	Hardware	3D Printer, Modeler, Rapid prototyping
20.3	Teaching aids (videos, etc.)	Slides, Video, Computer / Lap-top
20.4	Laboratory	CAD Lab
20.5	Equipment	CAD Workstations, Virtual Reality Equipment
20.6	Classroom infrastructure	Video Projector, interactive board
20.7	Site visits	Visits to see design houses, professionals, Tool Rooms, Group size about 80 students
20.8	Others (please specify)	Talking to various professionals.

21. Design content of the course(Percent of student time with examples, if possible)

21.1	Design-type problems	50 % designing products on CAD workstations
21.2	Open-ended problems	
21.3	Project-type activity	30% Design exercises
21.4	Open-ended laboratory work	20% Sketching, shaping, forming, Rapid prototyping
21.5	Others (please specify)	

Date:

(Signature of the Head of the Department/ Centre / School)

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1.	Department/Centre/School proposing the course	IDDC	
2.	Course Title	Applied Ergonomics	
3.	L-T-P structure	1-0-2	
4.	Credits	2	Non-graded Units
			Please fill appropriate details in S. No. 21
5.	Course number	DIL 722	
6.	Course Status (Course Category for Program) JDS		
	Institute Core for all UG programs		(No)
	Programme Linked Core for:		
	Departmental Core for:		
	Departmental Elective for:		
	Minor Area / Interdisciplinary Specialization Core for:		
	Minor Area / Interdisciplinary Specialization Elective for:		
	Programme Core for:		JDS
	Programme Elective for:		
	Open category Elective for all other programs (No if Institute Core)		(Yes)

7.	Pre-requisite(s)	
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8.	Status vis-à-vis other courses		
	8.1 List of courses precluded by taking this course (significant overlap)		
	(a)	Significant Overlap with any UG/PG course of the Dept./Centre/ School	
	(b)	Significant Overlap with any UG/PG course of other Dept./Centre/ School	
	8.2 Supersedes any existing course		DIL 731

9.	Not allowed for	
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10.	Frequency of offering (check one box)	☐ Every semester ☐ I sem ☒ II sem ☐ Either semester
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11.	Faculty who will teach the course (Dr. Jyoti Kumar and Sh. Sumer Singh)
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12.	Will the course require any visiting faculty?	(no)
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13.	Course objectives (about 50 words. "On successful completion of this course, a student should be able to..."): Apply physical and physiological considerations to design. Understand and use anthropometric data in design of workspaces. Use concept of fatigue and stress while designing for complex tasks. Understand mental workload in interaction based tasks and use it in designing interfaces.
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14.	Course contents (about 100 words; Topics to appear as course contents in the Courses of Study booklet) (Include Practical / Practice activities): Definition, origin, scope and goals of ergonomics as a field of study. Examples of applications of ergonomics in design. Types of data from human at physical, physiological, cognitive and affective levels. Data gathering and analysis techniques. Use of descriptive and inferential statistics in ergonomic data. Applications of mean, median, mode and percentile in anthropometry. Use of anthropometry in workstation design. Human physiological potentials and limitations in terms of load carrying capacity. Concept of comfort, fatigue and stress. Design for the cognitive user. Concept of mental workload. Cognitive perspective in control panel design and graphical user interface design.
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15. Lecture Outline(with topics and number of lectures)

Module no.	Topic	No. of hours (not exceeding 5h per topic)
1	Definition and origin of ergonomics	2
2	Data collection techniques in anthropometry	2
3	Usage of percentile data in design of workspaces	2
4	Force, repetitive injury, stress	2
5	Cognitive load in complex tasks	2
6	Applications of cognitive load in design	2
7	Control panel design principles	2
Total Lecture hours(14 times 'L')		14

16. Brief description of tutorial activities:

Module no.	Description	No. of hours
Total Tutorial hours(14 times 'T')		

17. Brief description of Practical / Practice activities

Module no.	Description	No. of hours
1	Workspace Design	8
2	Measurement of Workload	8
3	Design of ergonomic control panels	12
Total Practical / Practice hours(14 times 'P')		28

18. Brief description of module-wise activities pertaining to self-learning component

(Only for 700 / 800 level courses) (Include topics that the students would do self-learning from books / resource materials: Do not Include assignments / term papers etc.)

Module no.	Description
1	Reflections on human discomforts due to evolution of machines
2	Case study accidents due to poor ergonomics, for e.g. three mile island nuclear reactor in US
3	Study of research papers on relation between increased workload and depression
4	Understanding of 'Natural behaviours' through the book "Living with complexity" by Don Norman

(The volume of self-learning component in a 700-800 level course should typically be 25-30% of the volume covered in classroom contact)

19. Suggested texts and reference materials

STYLE: Author name and initials, Title, Edition, Publisher, Year.

Don Norman, Living with complexity, MIT Press, 2010.

Wesley Woodson, Peggy Tillman and Barry Tillman, Human Factors Design Handbook, McGraw-Hill Professional; 2 edition, 1992.

Mark S. Sanders and Ernest J. McCormick, Human Factors In Engineering and Design, McGraw-Hill, 1993.

20. Resources required for the course (itemized student access requirements, if any)

20.1	Software	Biomechanical Analysis Software, Anthropometry Software
20.2	Hardware	20 high end computer systems
20.3	Teaching aids (videos, etc.)	Description, Source , etc.
20.4	Laboratory	Advanced Ergonomics Lab
20.5	Equipment	Ergonomic Measurement Toolkits
20.6	Classroom infrastructure	Seating and projector facility with sound
20.7	Site visits	Visit to shop floor to analyze labor movements and pains
20.8	Others (please specify)	

21. Design content of the course(Percent of student time with examples, if possible)

21.1	Design-type problems	Design of workspaces, Design of control panels
21.2	Open-ended problems	Study of limits of human capability and comfort
21.3	Project-type activity	Gathering of anthropometric data
21.4	Open-ended laboratory work	Study of complex systems and design changes to simplify them
21.5	Others (please specify)	

Date:

(Signature of the Head of the Department/ Centre / School)

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1.	Department/Centre/School proposing the course	IDDC	
2.	Course Title	Advance Materials Processes and Die Design	
3.	L-T-P structure	2-0-2	
4.	Credits	3	Non-graded Units
5.	Course number	DIL 732	
6.	Course Status (Course Category for Program) Core		
	Institute Core for all UG programs	(No)	
	Programme Linked Core for:		
	Departmental Core for:		
	Departmental Elective for:		
	Minor Area / Interdisciplinary Specialization Core for:		
	Minor Area / Interdisciplinary Specialization Elective for:		
	Programme Core for:	M.Des	
	Programme Elective for:		
	Open category Elective for all other programs (No if Institute Core)	(Yes)	

7.	Pre-requisite(s)	None
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8.	Status vis-à-vis other courses		
	8.1 List of courses precluded by taking this course (significant overlap)		
	(a)	Significant Overlap with any UG/PG course of the Dept./Centre/ School	
	(b)	Significant Overlap with any UG/PG course of other Dept./Centre/ School	
	8.2 Supersedes any existing course		DIP 721, DIP 781, DIL 782

9.	Not allowed for	UG Students
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10.	Frequency of offering (check one box)	☐ Every semester ☐ I sem ☒ II sem ☐ Either semester
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11.	Faculty who will teach the course : Sumer Singh, P.V.M.Rao, Jyoti Kumar
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12.	Will the course require any visiting faculty?	(no)
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13.	Course objectives (about 50 words. "On successful completion of this course, a student should be able to..."): To impart knowledge and skills of materials and advanced manufacturing/prototyping processes necessary for product realization. Understanding relationship between materials, design and manufacturing process. Familiarizing with concepts of selection of materials and manufacturing process(es) for a given application.
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14.	Course contents (about 100 words; Topics to appear as course contents in the Courses of Study booklet) (Include Practical / Practice activities): Understanding properties and selection of natural and manmade materials including metals, plastics, ceramics, composites and natural materials. Understanding various manufacturing and prototyping methods including digital manufacturing/prototyping. Hands on product realization exercises involving selection of materials and manufacturing processes. Die and mould manufacturing methods including surface treatment and finishing processes. Prototyping projects involving CNC, 3-D Printing, Vacuum forming, etc
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15. Lecture Outline(with topics and number of lectures)

Module no.	Topic	No. of hours (not exceeding 5h per topic)
1	Understanding relation between materials, design and manufacturing processes	2
2	Classification of materials	2
3	Properties and selection of materials	4
4	Commonly used manufacturing /prototyping methods	4
5	Digital prototyping methods-CNC,3D Printing, etc.	3
6	Selection of manufacturing processes	2
7	Design and manufacturing of moulds and dies	3
8	Surface treatment and finishing methods	3
9	Advanced engineering materials	2
10	Case studies involving material and manufacturing processes	3
Total Lecture hours (14 times 'L')		28

16. Brief description of tutorial activities:

Module no.	Description	No. of hours
Total Tutorial hours (14 times 'T')		

17. Brief description of Practical / Practice activities

Module no.	Description	No. of hours
1	Hands on practice with hand tools, bench tools and manufacturing machines	8
2	Prototyping exercises with 3D-Printing, CNC, Vacuum Forming	8
3	Properties and selection of materials	4
4	Product realization project	8
Total Practical / Practice hours (14 times 'P')		28

18. Brief description of module-wise activities pertaining to self-learning component (Only for 700 / 800 level courses) (Include topics that the students would do self-learning from books / resource materials: Do not Include assignments / term papers etc.)

Module no.	Description
(The volume of self-learning component in a 700-800 level course should typically be 25-30% of the volume covered in classroom contact)	

19. Suggested texts and reference materials

STYLE: Author name and initials, Title, Edition, Publisher, Year.

Michael F. Ashby, Kara Johnson, material and Design, The Art and Science of Material Selection in product Design.
Elsevier, 2002, 2010, 2014
Peter Dewhurst , Geoffrey Boothroyd , Winston A. Knight, Product Design for Manufacture and Assembly, Taylor and Francis 2011
Megan Werner, Model Making, Princeton Architectural Press, 2011

Steve Hoskins, Stephen Hoskins, 3D Printing for Artists, Designers and Makers, Bloomsbury Academic, 2014

20. Resources required for the course (itemized student access requirements, if any)

20.1	Software	DFMA by Boothroyd, material selection software's
20.2	Hardware	Workshop facilities, use of Central workshop, Manufacturing machines
20.3	Teaching aids (videos, etc.)	Projectors, Audio visual systems
20.4	Laboratory	Tinkering Lab, 3-D Printing, CNC, Vacuum Forming
20.5	Equipment	Hand tools, Power tools, Vices,
20.6	Classroom infrastructure	Classroom facility for 20 students
20.7	Site visits	Manufacturing Industry, production lines
20.8	Others (please specify)	

21. Design content of the course (Percent of student time with examples, if possible)

21.1	Design-type problems	40 % Guided exercises to acquaint the students with available tools and techniques in workshops and machines.
21.2	Open-ended problems	20 % of exercises to create out of box approach to the subject to explore new forms and methods on existing machines
21.3	Project-type activity	40 % of activity as requirement for designing and developing tangible products in form of product realization projects.
21.4	Open-ended laboratory work	
21.5	Others (please specify)	

Date:

(Signature of the Head of the Department/ Centre / School)

Date of Approval of Template by Senate	
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COURSE TEMPLATE

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1.	Department/Centre/School proposing the course	IDDC	
2.	Course Title	Design Project 1	
3.	L-T-P structure	0-0-6	
4.	Credits	3	Non-graded Units
5.	Course number	DID 792	
6.	Course Status (Course Category for Program) Core		
	Institute Core for all UG programs	(No)	
	Programme Linked Core for:		
	Departmental Core for:		
	Departmental Elective for:		
	Minor Area / Interdisciplinary Specialization Core for:		
	Minor Area / Interdisciplinary Specialization Elective for:		
	Programme Core for:	M.Des	
	Programme Elective for:		
	Open category Elective for all other programs (No if Institute Core)	(Yes)	

7.	Pre-requisite(s)	Students should have completed the first semester of M.Des
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8.	Status vis-à-vis other courses		
	8.1	List of courses precluded by taking this course (significant overlap)	
	(a)	Significant Overlap with any UG/PG course of the Dept./Centre/ School	
	(b)	Significant Overlap with any UG/PG course of other Dept./Centre/ School	
	8.2	Supersedes any existing course	DID 792

9.	Not allowed for	Any other student other than M.Des
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10.	Frequency of offering (check one box)	☐ Every semester ☐ I sem ☒ II sem ☐ Either semester
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11.	Faculty who will teach the course : Sumer Singh, S.K.Atrey, Jyoti Kumar
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12.	Will the course require any visiting faculty?	(no)
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13.	Course objectives (about 50 words. “On successful completion of this course, a student should be able to...”): Independently follow the detailed and comprehensive design process to solve design problem. Learn need Identification, justification for identified need, study, concept generation, concept selection, development of prototypes, manufacturing drawings for production.
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14.	Course contents (about 100 words; Topics to appear as course contents in the Courses of Study booklet) (Include Practical / Practice activities): Aim of the project to help the student independently solve a design problem against an pre-identified design brief.
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15. Lecture Outline(with topics and number of lectures)

Module no.	Topic	No. of hours (not exceeding 5h per topic)
1		
8		
Total Lecture hours (14 times 'L')		

16. Brief description of tutorial activities:

Module no.	Description	No. of hours
Total Tutorial hours (14 times 'T')		

17. Brief description of Practical / Practice activities

Module no.	Description	No. of hours
1	Need Identification and justification	10
2	Study, Concept generation, Concept selection	20
3	Development of prototypes, Manufacturing drawings for production.	34
4	Report Writing/Presentation	20
5		
6		
7		
8		
Total Practical / Practice hours (14 times 'P')		84

- 18. Brief description of module-wise activities pertaining to self-learning component** (Only for 700 / 800 level courses) (Include topics that the students would do self-learning from books / resource materials: Do not Include assignments / term papers etc.)

Module no.	Description
(The volume of self-learning component in a 700-800 level course should typically be 25-30% of the volume covered in classroom contact)	

19. Suggested texts and reference materials

STYLE: Author name and initials, Title, Edition, Publisher, Year.

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20. Resources required for the course (itemized student access requirements, if any)

20.1	Software	Name of software, number of licenses, etc.
20.2	Hardware	Nature of hardware, number of access points, etc.
20.3	Teaching aids (videos, etc.)	Description, Source , etc.
20.4	Laboratory	Type of facility required, number of students etc.
20.5	Equipment	Type of equipment required, number of access points, etc.
20.6	Classroom infrastructure	Type of facility required, number of students etc.
20.7	Site visits	Type of Industry/ Site, typical number of visits, number of students etc.
20.8	Others (please specify)	

21. Design content of the course (Percent of student time with examples, if possible)

21.1	Design-type problems	80 % of effort should go in thorough design practice
21.2	Open-ended problems	20 % effort should go in identification of a niche area
21.3	Project-type activity	
21.4	Open-ended laboratory work	
21.5	Others (please specify)	

Date:

(Signature of the Head of the Department/ Centre / School)

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COURSE TEMPLATE

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1.	Department/Centre/School proposing the course	IDDC		
2.	Course Title	Summer Internship		
3.	L-T-P structure	0-0-4		
4.	Credits	0	Non-graded Units	2
5.	Course number	DIR 801		
6.	Course Status (Course Category for Program) Core			
	Institute Core for all UG programs			(No)
	Programme Linked Core for:			
	Departmental Core for:			
	Departmental Elective for:			
	Minor Area / Interdisciplinary Specialization Core for:			
	Minor Area / Interdisciplinary Specialization Elective for:			
	Programme Core for:			M.Des
	Programme Elective for:			
	Open category Elective for all other programs (No if Institute Core)			(Yes)

7.	Pre-requisite(s)	None
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8.	Status vis-à-vis other courses		
	8.1 List of courses precluded by taking this course (significant overlap)		
	(a)	Significant Overlap with any UG/PG course of the Dept./Centre/ School	
	(b)	Significant Overlap with any UG/PG course of other Dept./Centre/ School	
	8.2 Supersedes any existing course		None

9.	Not allowed for	UG Students
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10.	Frequency of offering (check one box)	☐ Every semester ☐ I sem ☒ II sem ☐ Either semester
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11.	Faculty who will teach the course : Sumer Singh, S.K.Atrey, Jyoti Kumar
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12.	Will the course require any visiting faculty?	(no)
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13.	Course objectives (about 50 words. "On successful completion of this course, a student should be able to..."): Excellence in students area of interest through professional projects of relevance during summers.
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14.	Course contents (about 100 words; Topics to appear as course contents in the Courses of Study booklet) (Include Practical / Practice activities): Identifying of the project area, setting the objectives, milieu and deliverables of the Internship. report writing/Presentation.
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15. Lecture Outline(with topics and number of lectures)

Module no.	Topic	No. of hours (not exceeding 5h per topic)
1		
2		
3		

4		
5		
6		
7		
8		
Total Lecture hours (14 times 'L')		

16. Brief description of tutorial activities:

Module no.	Description	No. of hours
Total Tutorial hours (14 times 'T')		

17. Brief description of Practical / Practice activities

Module no.	Description	No. of hours
1	Identification of Project area and Setting up of objectives, milieu	10
2	Delivering the objectives through design research and product development	36
3	Submission of report/Presentation	10
4		
5		
Total Practical / Practice hours (14 times 'P')		56

- 18. Brief description of module-wise activities pertaining to self-learning component** (Only for 700 / 800 level courses) (Include topics that the students would do self-learning from books / resource materials: Do not Include assignments / term papers etc.)

Module no.	Description
(The volume of self-learning component in a 700-800 level course should typically be 25-30% of the volume covered in classroom contact)	

- 19. Suggested texts and reference materials**
STYLE: Author name and initials, Title, Edition, Publisher, Year.

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- 20. Resources required for the course** (itemized student access requirements, if any)

20.1	Software	Name of software, number of licenses, etc.
20.2	Hardware	Nature of hardware, number of access points, etc.
20.3	Teaching aids (videos, etc.)	Description, Source , etc.
20.4	Laboratory	Type of facility required, number of students etc.
20.5	Equipment	Type of equipment required, number of access points, etc.
20.6	Classroom infrastructure	Type of facility required, number of students etc.
20.7	Site visits	Type of Industry/ Site, typical number of visits, number of students etc.
20.8	Others (please specify)	

21. Design content of the course (Percent of student time with examples, if possible)

21.1	Design-type problems	
21.2	Open-ended problems	
21.3	Project-type activity	80% of students time should go on hands on training in internship
21.4	Open-ended laboratory work	20% of student time should go report writing and presentation
21.5	Others (please specify)	

Date:

(Signature of the Head of the Department/ Centre / School)

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COURSE TEMPLATE

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1.	Department/Centre/School proposing the course	IDDC	
2.	Course Title	Design Project 2	
3.	L-T-P structure	0-0-12	
4.	Credits	6	Non-graded Units
5.	Course number	DID 891	
6.	Course Status (Course Category for Program) Core		
	Institute Core for all UG programs	(No)	
	Programme Linked Core for:		
	Departmental Core for:		
	Departmental Elective for:		
	Minor Area / Interdisciplinary Specialization Core for:		
	Minor Area / Interdisciplinary Specialization Elective for:		
	Programme Core for:	M.Des	
	Programme Elective for:		
	Open category Elective for all other programs (No if Institute Core)	(Yes)	

7.	Pre-requisite(s)	Students should have completed the second semester of M.Des
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8.	Status vis-à-vis other courses		
	8.1 List of courses precluded by taking this course (significant overlap)		
	(a)	Significant Overlap with any UG/PG course of the Dept./Centre/ School	
	(b)	Significant Overlap with any UG/PG course of other Dept./Centre/ School	
	8.2 Supersedes any existing course		DID 891

9.	Not allowed for	Any other student other than M.Des
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10.	Frequency of offering (check one box)	☐ Every semester ☒ I sem ☐ II sem ☐ Either semester
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11.	Faculty who will teach the course : Sumer Singh, S.K.Atrey, Jyoti Kumar
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12.	Will the course require any visiting faculty?	(no)
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13.	Course objectives (about 50 words. "On successful completion of this course, a student should be able to..."): Enhance the ability to practice a thorough design process . Impart the ability to search relevant IPR in the related design domain.
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14.	Course contents (about 100 words; Topics to appear as course contents in the Courses of Study booklet) (Include Practical / Practice activities): The student will be able to practice the design process to solve a professionally challenging design problem. The student should exhibit the sensitivity to the multidimensionality of the problems in the design domain. They should be able to prove their design outcome as viable and practice solution for the given problem. The students are expected to exhibit their work to the professional community.
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15. Lecture Outline(with topics and number of lectures)

Module no.	Topic	No. of hours (not exceeding 5h per topic)
1		
2		

3		
4		
5		
6		
7		
8		
Total Lecture hours (14 times 'L')		

16. Brief description of tutorial activities:

Module no.	Description	No. of hours
Total Tutorial hours (14 times 'T')		

17. Brief description of Practical / Practice activities

Module no.	Description	No. of hours
1	Need Identification and justification	14
2	Study, Concept generation, Concept selection	28
3	Development of prototypes, Manufacturing drawings for production.	28
4	Design development	84
5	Design documentation and IPR documentation	14
Total Practical / Practice hours (14 times 'P')		168

18. Brief description of module-wise activities pertaining to self-learning component (Only for 700 / 800 level courses) (Include topics that the students would do self-learning from books / resource materials: Do not Include assignments / term papers etc.)

Module no.	Description
(The volume of self-learning component in a 700-800 level course should typically be 25-30% of the volume covered in classroom contact)	

19. Suggested texts and reference materials

STYLE: Author name and initials, Title, Edition, Publisher, Year.

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20. Resources required for the course (itemized student access requirements, if any)

20.1	Software	Name of software, number of licenses, etc.
20.2	Hardware	Nature of hardware, number of access points, etc.
20.3	Teaching aids (videos, etc.)	Description, Source , etc.
20.4	Laboratory	Type of facility required, number of students etc.
20.5	Equipment	Type of equipment required, number of access points, etc.
20.6	Classroom infrastructure	Type of facility required, number of students etc.
20.7	Site visits	Type of Industry/ Site, typical number of visits, number of students etc.
20.8	Others (please specify)	

21. Design content of the course (Percent of student time with examples, if possible)

21.1	Design-type problems	20 % of effort should go in thorough design practice
21.2	Open-ended problems	30 % effort should go in identification of a niche area
21.3	Project-type activity	50 % of effort should go in filing a patent
21.4	Open-ended laboratory work	
21.5	Others (please specify)	

Date:

(Signature of the Head of the Department/ Centre / School)

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1.	Department/Centre/School proposing the course	IDDC	
2.	Course Title	Design Project 3: Industry/ Research Design Project	
3.	L-T-P structure	0-0-18	
4.	Credits	9	Non-graded Units
5.	Course number	DID 892	
6.	Course Status (Course Category for Program)		
	Institute Core for all UG programs	(No)	
	Programme Linked Core for:		
	Departmental Core for:		
	Departmental Elective for:		
	Minor Area / Interdisciplinary Specialization Core for:		
	Minor Area / Interdisciplinary Specialization Elective for:		
	Programme Core for:	M.Des	
	Programme Elective for:		
	Open category Elective for all other programs (No if Institute Core)	(Yes)	

7.	Pre-requisite(s)	Students should have completed the second semester of M.Des
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8.	Status vis-à-vis other courses		
	8.1 List of courses precluded by taking this course (significant overlap)		
	(a)	Significant Overlap with any UG/PG course of the Dept./Centre/ School	
	(b)	Significant Overlap with any UG/PG course of other Dept./Centre/ School	
	8.2 Supersedes any existing course		DID 892

9.	Not allowed for	Any other student other than M.Des
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10.	Frequency of offering (check one box)	☐ Every semester ☐ I sem ☒ II sem ☐ Either semester
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11.	Faculty who will teach the course : Sumer Singh, S.K.Atrey, Jyoti Kumar
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12.	Will the course require any visiting faculty?	(no)
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13.	Course objectives (about 50 words. "On successful completion of this course, a student should be able to..."): Create a design research acumen in graduating designers.
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14.	Course contents (about 100 words; Topics to appear as course contents in the Courses of Study booklet) (Include Practical / Practice activities): To develop the ability to look at design problems from a research perspective. The student is expected to contribute to the professional design field thorough new design knowledge generation. The project is aimed to polish the designer's research skills. The designer is expected to deliver cutting edge research and be able to articulate it professionally.
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15. Lecture Outline(with topics and number of lectures)

Module no.	Topic	No. of hours (not exceeding 5h per topic)
1		
Total Lecture hours (14 times 'L')		

16. Brief description of tutorial activities:

Module no.	Description	No. of hours
Total Tutorial hours (14 times 'T')		

17. Brief description of Practical / Practice activities

Module no.	Description	No. of hours
1	Need Identification and justification document	14
2	Design research, Concept generation, Concept selection	2
3	Manufacturing drawings for production.	2
4	Development of prototypes,	1
5	Research writing	12
Total Practical / Practice hours (14 times 'P')		

18. Brief description of module-wise activities pertaining to self-learning component

(Only for 700 / 800 level courses) (Include topics that the students would do self-learning from books / resource materials: Do not Include assignments / term papers etc.)

Module no.	Description
(The volume of self-learning component in a 700-800 level course should typically be 25-30% of the volume covered in classroom contact)	

19. Suggested texts and reference materials

STYLE: Author name and initials, Title, Edition, Publisher, Year.

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20. Resources required for the course (itemized student access requirements, if any)

20.1	Software	Name of software, number of licenses, etc.
20.2	Hardware	Nature of hardware, number of access points, etc.
20.3	Teaching aids (videos, etc.)	Description, Source , etc.
20.4	Laboratory	Type of facility required, number of students etc.
20.5	Equipment	Type of equipment required, number of access points, etc.
20.6	Classroom infrastructure	Type of facility required, number of students etc.
20.7	Site visits	Type of Industry/ Site, typical number of visits, number of students etc.
20.8	Others (please specify)	

21. Design content of the course (Percent of student time with examples, if possible)

21.1	Design-type problems	20 % of effort should go in thorough design practice
21.2	Open-ended problems	20 % effort should go in identification of a niche area
21.3	Project-type activity	60 % of effort should go in filing a patent
21.4	Open-ended laboratory work	
21.5	Others (please specify)	

Date:

(Signature of the Head of the Department/ Centre / School)

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1.	Department/Centre/School proposing the course	IDDC	
2.	Course Title	Design for Usability	
3.	L-T-P structure	2-0-2	
4.	Credits	3	Non-graded Units Please fill appropriate details in S. No. 21
5.	Course number	DIL 782	
6.	Course Status (Course Category for Program) JDS		
	Institute Core for all UG programs		(No)
	Programme Linked Core for:		
	Departmental Core for:		
	Departmental Elective for:		
	Minor Area / Interdisciplinary Specialization Core for:		
	Minor Area / Interdisciplinary Specialization Elective for:		
	Programme Core for:		JDS
	Programme Elective for:		
	Open category Elective for all other programs (No if Institute Core)		(Yes)

7.	Pre-requisite(s)	
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8.	Status vis-à-vis other courses		
	8.1 List of courses precluded by taking this course (significant overlap)		
	(a)	Significant Overlap with any UG/PG course of the Dept./Centre/ School	
	(b)	Significant Overlap with any UG/PG course of other Dept./Centre/ School	
	8.2 Supersedes any existing course		

9.	Not allowed for	
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10.	Frequency of offering (check one box)	☐ Every semester ☐ I sem ☐ II sem ☒ Either semester
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11.	Faculty who will teach the course (Dr. Jyoti Kumar)
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12.	Will the course require any visiting faculty?	(no)
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13.	Course objectives (about 50 words. "On successful completion of this course, a student should be able to..."): Explain the meaning of usability, parameters of usability, use and need of usability approach in design. Student will be able to conduct usability tests, create testing protocols and screeners on his/her own.
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14.	Course contents (about 100 words; Topics to appear as course contents in the Courses of Study booklet) (Include Practical / Practice activities): History of product increase in complexity and usability since WW-2. Story of transition in human society form Man-Machine Interaction to Human-Computer Interaction. Relationship between product complexity and mental workload. Subjective and objective measurements of product complexity and mental workload. User centered design process for usable product design. Introduction to concept of 'mental models' and exercises in understanding users' mental models. Creation of Personas and scenarios. Conduct of task analysis. Operational definitions of usability. Measurement of ease of use, efficiency and effectiveness of digital products. Design of interactive products from usability perspective. Development of user screeners, testing protocols and conduct of usability tests. Creation of paper prototypes, wireframes, information architecture. Conduct of low fidelity tests, card sorting, reverse card sorting, affordance tests, high fidelity testing and brand testing.
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15. Lecture Outline(with topics and number of lectures)

Module no.	Topic	No. of hours (not exceeding 5h per topic)
1	History of usability	2
2	UCD process	4
3	Understanding of mental models	4
4	Personas and scenarios	4
5	Task analysis	2
6	Development of Wireframes and Paper prototypes	4
7	Screeners and test protocols	2
8	Usability testing	4
9	Card sorting, affordance testing and brand testing	2
Total Lecture hours(14 times 'L')		28

16. Brief description of tutorial activities:

Module no.	Description	No. of hours
Total Tutorial hours(14 times 'T')		

17. Brief description of Practical / Practice activities

Module no.	Description	No. of hours
1	Interviews to get mental models	6
2	Development of paper prototypes	4
3	Card Sorting and Reverse card sorting	6
4	Usability testing paper prototype	6
5	Usability testing on high fidelity prototypes with software	6
Total Practical / Practice hours(14 times 'P')		28

18. Brief description of module-wise activities pertaining to self-learning component (Only for 700 / 800 level courses) (Include topics that the students would do self-learning from books / resource materials: Do not Include assignments / term papers etc.)

Module no.	Description
1	Study of mobile phone's usability
2	Applications of usability in day to day life products
3	Study of 'design of future things' by Don Norman
4	Watching sci-fi movies and identifying mental complexity arising out of the future gadgets
(The volume of self-learning component in a 700-800 level course should typically be 25-30% of the volume covered in classroom contact)	

19. Suggested texts and reference materials

STYLE: Author name and initials, Title, Edition, Publisher, Year.

Jacob Nielsen, Usability Engineering, Morgan Kaufmann, 1993.

Jeffrey Rubin and Dana Chisnell, Handbook of Usability Testing: How to Plan, Design, and Conduct Effective Tests Paperback by. Wiley, 2 edition, 2008.

Steve Krug, Don't Make Me Think, Revisited: A Common Sense Approach to Web Usability (3rd Edition) New Riders, 2014.

20. Resources required for the course (itemized student access requirements, if any)

20.1	Software	Morae, 20 licences
20.2	Hardware	20 computer systems with one way mirror in between
20.3	Teaching aids (videos, etc.)	
20.4	Laboratory	Usability Testing lab and User Interview Lab (video setup with one way mirror in between)
20.5	Equipment	Video recording camera, external hard drives for storage of long hours of videos
20.6	Classroom infrastructure	Lecture setup with projector and sound system for videos
20.7	Site visits	Visit to craft museums, consumer electronics companies once during the course
20.8	Others (please specify)	A product library of easy of use and difficult to use products need to be created for study by students

21. Design content of the course(Percent of student time with examples, if possible)

21.1	Design-type problems	Creation of applications to solve day to day problems
21.2	Open-ended problems	Write essays on likely future scenario due to increase in technological complexity
21.3	Project-type activity	During Mid Sem break students will be asked to survey their community for easy and difficult to use products and prepare report on likely reasons for such difficulty
21.4	Open-ended laboratory work	Pick different alarm clocks and study ways to set timers.
21.5	Others (please specify)	Creation

Date:

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COURSE TEMPLATE

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1.	Department/Centre/School proposing the course	IDDC	
2.	Course Title	Design for User Experience	
3.	L-T-P structure	3-0-0	
4.	Credits	3	Non-graded Units Please fill appropriate details in S. No. 21
5.	Course number	DIR 832	
6.	Course Status (Course Category for Program) JDS		
	Institute Core for all UG programs	(No)	
	Programme Linked Core for:		
	Departmental Core for:		
	Departmental Elective for:		
	Minor Area / Interdisciplinary Specialization Core for:		
	Minor Area / Interdisciplinary Specialization Elective for:		
	Programme Core for:	JDS	
	Programme Elective for:		
	Open category Elective for all other programs (No if Institute Core)	(Yes)	

7.	Pre-requisite(s)	None
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8.	Status vis-à-vis other courses		
	8.1	List of courses precluded by taking this course (significant overlap)	
	(a)	Significant Overlap with any UG/PG course of the Dept./Centre/ School	
	(b)	Significant Overlap with any UG/PG course of other Dept./Centre/ School	
	8.2	Supersedes any existing course	

9.	Not allowed for	
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10.	Frequency of offering (check one box)	☐ Every semester ☐ I sem ☐ II sem ☒ Either semester
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11.	Faculty who will teach the course (Dr. Jyoti Kumar)
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12.	Will the course require any visiting faculty?	(no)
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13.	Course objectives (about 50 words. "On successful completion of this course, a student should be able to..."): Explain importance of user experience approach in design process, physiological basis of user experiences, nature's need for emotions as faster channel of communication and reason why emotions overpower decisions when users buy products. Be able to conduct user experience interviews to understand people's experiential evaluation of a product. Be able to conduct physiological measurements to ascertain users' experiences.
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14.	Course contents (about 100 words; Topics to appear as course contents in the Courses of Study booklet) (Include Practical / Practice activities): Importance of user experience approach in design. Methods to understand users' experiences. Modeling of user behaviors. Cognitive, affective and cultural perspectives in experiences. Consideration for human experiences in interaction design. Methods of direct, indirect, subjective and objective measurements of human experience. Issues of reliability and validity in experience measurement. Qualitative interview techniques for gathering user motivations and emotions. Analysis of qualitative experiential data from users. Gender and cultural biases in experience measurements. Management of psychological space in user experience testing setups. Development of user experience strategy, creation of user interfaces and testing of digital products from experiential perspective.
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15. Lecture Outline(with topics and number of lectures)

Module no.	Topic	No. of hours (not exceeding 5h per topic)
1	Introduction to user experience approach in design	4
2	Role of human emotions in user's product purchase decision making	4
3	Qualitative interviews for understanding user experiences	8
4	Online cognition, affect and decisions	4
5	Human biases in online decision making	2
6	Physiological approach to understand user experiences	4
7	Development of user experience strategy for digital products	6
8	Creation of user interfaces based on strategy data	4
9	Evaluation of user experiences using physiological, verbal and observational methods	6
Total Lecture hours(14 times 'L')		42

16. Brief description of tutorial activities:

Module no.	Description	No. of hours
Total Tutorial hours(14 times 'T')		

17. Brief description of Practical / Practice activities

Module no.	Description	No. of hours
1		
2		
3		
Total Practical / Practice hours(14 times 'P')		

18. Brief description of module-wise activities pertaining to self-learning component

(Only for 700 / 800 level courses) (Include topics that the students would do self-learning from books / resource materials: Do not Include assignments / term papers etc.)

Module no.	Description
1	Diary writing of personal experiences with products
2	Analysis of peer's decisions in product purchase
3	Online purchase behaviour study using "Psychology of influence" book by Cialdini
4	Identification of products in daily use which belong to Norman's three levels of design

(The volume of self-learning component in a 700-800 level course should typically be 25-30% of the volume covered in classroom contact)

19. Suggested texts and reference materials

STYLE: Author name and initials, Title, Edition, Publisher, Year.

Don Norman, Emotional Design, Basic Books, 2005.
Dan Ariely, Predictably Irrational, Harper Perennial, 2010.
Daniel Kahneman, Thinking, Fast and Slow, Farrar, Straus and Giroux, 2013.
Robert B. Cialdini, Influence: The Psychology of Persuasion, Revised Edition, Harper Business, 2006
V.S. Ramachandran, The Tell-Tale Brain: A Neuroscientist's Quest for What Makes Us Human, W. W. Norton & Company, 2012
Susan Weinschenk, Neuro Web Design: What Makes Them Click?, New Riders, 2009.

20. Resources required for the course (itemized student access requirements, if any)

20.1	Software	EEG, ECG and GSR softwares
20.2	Hardware	20 high end computers
20.3	Teaching aids (videos, etc.)	Cialdini's video lectures
20.4	Laboratory	User experience lab
20.5	Equipment	EEG, ECG and GSR for physiological measurements of UX
20.6	Classroom infrastructure	Projector and audio
20.7	Site visits	Tour of neighborhood slums to understand their product decision processes
20.8	Others (please specify)	

21. Design content of the course(Percent of student time with examples, if possible)

21.1	Design-type problems	Design of user interfaces
21.2	Open-ended problems	Diary writing of experiential products in community
21.3	Project-type activity	Study of decision making processes in consumer electronic products and identification of biases
21.4	Open-ended laboratory work	Creation of user experience strategies
21.5	Others (please specify)	

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COURSE TEMPLATE

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1.	Department/Centre/School proposing the course	IDDC	
2.	Course Title	Design in Indian Context	
3.	L-T-P structure	3-0-0	
4.	Credits	3	Non-graded Units Please fill appropriate details in S. No. 21
5.	Course number	DIR 862	
6.	Course Status (Course Category for Program) JDS		
	Institute Core for all UG programs		(No)
	Programme Linked Core for:		
	Departmental Core for:		
	Departmental Elective for:		
	Minor Area / Interdisciplinary Specialization Core for:		
	Minor Area / Interdisciplinary Specialization Elective for:		
	Programme Core for:		JDS
	Programme Elective for:		
	Open category Elective for all other programs (No if Institute Core)		(Yes)

7.	Pre-requisite(s)	None
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8.	Status vis-à-vis other courses		
	8.1 List of courses precluded by taking this course (significant overlap)		
	(a)	Significant Overlap with any UG/PG course of the Dept./Centre/ School	
	(b)	Significant Overlap with any UG/PG course of other Dept./Centre/ School	
	8.2 Supersedes any existing course		

9.	Not allowed for	
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10.	Frequency of offering (check one box)	☐ Every semester ☐ I sem ☐ II sem ☒ Either semester
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11.	Faculty who will teach the course (Dr. Jyoti Kumar)
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12.	Will the course require any visiting faculty?	(no)
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13.	Course objectives (about 50 words. "On successful completion of this course, a student should be able to..."): Understand culture as an influence in product choice, creation of designs in cultural context, appreciation of cultural inputs in design formation of products. Application of material and social cultural as aid to design thinking process.
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14.	Course contents (about 100 words; Topics to appear as course contents in the Courses of Study booklet) (Include Practical / Practice activities): Introduction to culture form product design perspective. Models and definitions of culture. Product design culture of India. Culture as an aid in consumer product choice. Cross cultural biases in product decisions. Cross cultural design teams. Considerations in designing for a user from another culture. Exercises in product as a cultural thought. Culture in evolutionary perspective and design of new material cultures through products and lifestyles design.
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15. Lecture Outline(with topics and number of lectures)

Module no.	Topic	No. of hours (not exceeding 5h per topic)
1	Introduction to culture as a subject of study	4
2	Role of human culture in user's product choice	4
3	Study of cultural artifacts from ancient to modern India	8
4	Cross cultural biases	4
5	Development of new material culture through design	6
6	Applications of cultural models to evaluate product acceptability	4
7	Working in cross cultural design teams	4
8	Design considerations for Indian context	8
9		
Total Lecture hours(14 times 'L')		42

16. Brief description of tutorial activities:

Module no.	Description	No. of hours
Total Tutorial hours(14 times 'T')		

17. Brief description of Practical / Practice activities

Module no.	Description	No. of hours
1		
2		
3		
Total Practical / Practice hours(14 times 'P')		

18. Brief description of module-wise activities pertaining to self-learning component

(Only for 700 / 800 level courses) (Include topics that the students would do self-learning from books / resource materials: Do not Include assignments / term papers etc.)

Module no.	Description
1	Observations and report on cultural differences between people
2	Study of ancient Indian artifacts
3	Impact of ancient product cultures on modern products in India
4	Reading "Design, the Indian context" by H. Kumar Vyas.
(The volume of self-learning component in a 700-800 level course should typically be 25-30% of the volume covered in classroom contact)	

19. Suggested texts and reference materials

STYLE: Author name and initials, Title, Edition, Publisher, Year.

Geert Hofstede, Culture's Consequences: Comparing Values, Behaviors, Institutions and Organizations Across Nations, SAGE Publications, 2003.

Richard E. Nisbett, The Geography of Thought: How Asians and Westerners Think Differently...and Why, Free Press, 2004.

H. Kumar Vyas, Design, the Indian context: Learning the historical rationale of the Indian design idiom, National Institute of Design, 2000.V.S. Ramachandran, The Tell-Tale Brain: A Neuroscientist's Quest for What Makes Us Human, W. W. Norton & Company, 2012

Susan Weinschenk, Neuro Web Design: What Makes Them Click?, New Riders, 2009.

20. Resources required for the course (itemized student access requirements, if any)

20.1	Software	
20.2	Hardware	
20.3	Teaching aids (videos, etc.)	
20.4	Laboratory	
20.5	Equipment	
20.6	Classroom infrastructure	Projector and audio
20.7	Site visits	Museums to understand ancient cultures
20.8	Others (please specify)	

21. Design content of the course(Percent of student time with examples, if possible)

21.1	Design-type problems	30% (Creation of digital and physical artifacts for cultural suitability)
21.2	Open-ended problems	20% (Study of neighborhood cultural differences)
21.3	Project-type activity	Development of products to shift the main stream culture
21.4	Open-ended laboratory work	
21.5	Others (please specify)	

Date:

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1.	Department/Centre/School proposing the course	IDDC	
2.	Course Title	Strategic Design Management	
3.	L-T-P structure	2-0-2	
4.	Credits	3	Non-graded Units
5.	Course number	DIR 852/ Open elective	
6.	Course Status (Course Category for Program) Open elective		
	Institute Core for all UG programs	(No)	
	Programme Linked Core for:		
	Departmental Core for:		
	Departmental Elective for:		
	Minor Area / Interdisciplinary Specialization Core for:		
	Minor Area / Interdisciplinary Specialization Elective for:		
	Programme Core for:		
	Programme Elective for:	M.Des	
	Open category Elective for all other programs (No if Institute Core)	(Yes)	

7.	Pre-requisite(s)	None
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8.	Status vis-à-vis other courses		
	8.1 List of courses precluded by taking this course (significant overlap)		
	(a)	Significant Overlap with any UG/PG course of the Dept./Centre/ School	
	(b)	Significant Overlap with any UG/PG course of other Dept./Centre/ School	
	8.2 Supersedes any existing course		DIP 811, DIR 821

9.	Not allowed for	NA
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10.	Frequency of offering (check one box)	☐ Every semester ☐ I sem ☒ II sem ☐ Either semester
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11.	Faculty who will teach the course : Sumer Singh, Jyoti Kumar
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12.	Will the course require any visiting faculty?	(no)
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13.	Course objectives (about 50 words. "On successful completion of this course, a student should be able to..."): Understand and excel in design management. position design as a strategy. solve organizational problems through design in varied domain like business, strategy, retail, research, system design.
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14.	Course contents (about 100 words; Topics to appear as course contents in the Courses of Study booklet) (Include Practical / Practice activities): Branding and brand development, Repositioning in market, disruptive innovation for market capitalization, Retail design, design of services, designing for new businesses.
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15. Lecture Outline(with topics and number of lectures)

Module no.	Topic	No. of hours (not exceeding 5h per topic)
1	Branding and brand development	4
2	Repositioning in market	5
3	Disruptive innovation for market capitalization	4
4	Retail design	5
5	Design of services	5
6	Designing for new businesses.	5
Total Lecture hours (14 times 'L')		28

16. Brief description of tutorial activities:

Module no.	Description	No. of hours
Total Tutorial hours (14 times 'T')		

17. Brief description of Practical / Practice activities

Module no.	Description	No. of hours
1	Collection of case studies on branding	6
2	Intervention in retail design	6
3	Intervention in services design	6
4	Project in proposing a new business	10
Total Practical / Practice hours (14 times 'P')		28

18. Brief description of module-wise activities pertaining to self-learning component (Only for 700 / 800 level courses) (Include topics that the students would do self-learning from books / resource materials: Do not Include assignments / term papers etc.)

Module no.	Description
(The volume of self-learning component in a 700-800 level course should typically be 25-30% of the volume covered in classroom contact)	

19. Suggested texts and reference materials

STYLE: Author name and initials, Title, Edition, Publisher, Year.

Aramand Hatchuel, Benoit Weil Pascal, Le Masson, Strategic Management of Innovation and Design, Cambridge University Press, 2010

David Aaker, Building Strong Brands, Simon, 2010

Thorsten Frierk, Disruptive Innovation, Grin Verlag, 2013

Brown Phd, Systems Thinking Strategy: The New Way to Understand Your Business and Drive Performance, IUniverse.com, 2012

Marc Stickdorn, Jakob Schneider, This Is Service Design Thinking: Basics, Tools, Cases, John Wiley & Sons, 2012

20. Resources required for the course (itemized student access requirements, if any)

20.1	Software	Ms Office, Preezi
20.2	Hardware	NA
20.3	Teaching aids (videos, etc.)	Projector , Audio Visual aids.
20.4	Laboratory	Brainstorming/ Discussion space for 10 students
20.5	Equipment	NA
20.6	Classroom infrastructure	Sitting capacity for 10 students
20.7	Site visits	Visit to urban milieu for brand analysis
20.8	Others (please specify)	

21. Design content of the course (Percent of student time with examples, if possible)

21.1	Design-type problems	20 % of student time should go understanding the concept of Strategic design management
21.2	Open-ended problems	30% of student time should go in learning form case studies and examples
21.3	Project-type activity	50% of students time should go in designing for strategy
21.4	Open-ended laboratory work	
21.5	Others (please specify)	

Date:

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1.	Department/Centre/School proposing the course	IDDC	
2.	Course Title	Design for Sustainability	
3.	L-T-P structure	2-0-2	
4.	Credits	3	Non-graded Units
5.	Course number	DIR 822	
6.	Course Status (Course Category for Program)		
	Institute Core for all UG programs	(No)	
	Programme Linked Core for:		
	Departmental Core for:		
	Departmental Elective for:		
	Minor Area / Interdisciplinary Specialization Core for:		
	Minor Area / Interdisciplinary Specialization Elective for:		
	Programme Core for:		
	Programme Elective for:	M.Des	
	Open category Elective for all other programs (No if Institute Core)	(Yes)	

7.	Pre-requisite(s)	None
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8.	Status vis-à-vis other courses		
	8.1	List of courses precluded by taking this course (significant overlap)	
	(a)	Significant Overlap with any UG/PG course of the Dept./Centre/ School	
	(b)	Significant Overlap with any UG/PG course of other Dept./Centre/ School	
	8.2	Supersedes any existing course	DIP 811, DIR 813

9.	Not allowed for	NA
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10.	Frequency of offering (check one box)	☐ Every semester ☒ I sem ☐ II sem ☐ Either semester
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11.	Faculty who will teach the course : Sumer Singh, Jyoti Kumar
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12.	Will the course require any visiting faculty?	(no)
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13.	Course objectives (about 50 words. "On successful completion of this course, a student should be able to..."): Understand the nuances of sustainability. would have an evolved concern towards environment, would be able to accommodate environmental concerns in design. would be able to design products , services, systems which are beneficial for environment. Develop a research interest in the area of sustainable development.
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14.	Course contents (about 100 words; Topics to appear as course contents in the Courses of Study booklet) (Include Practical / Practice activities): Concept of sustainability, Triple bottom line, world vision for sustainability, Emerging trends in the area of sustainability, Metrics for measurement of sustainability, Product lifecycle management and sustainability, Ecodesign.
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15. Lecture Outline(with topics and number of lectures)

Module no.	Topic	No. of hours (not exceeding 5h per topic)
1	Concept of sustainability,	4
2	Triple bottom line, world vision for sustainability,	2
3	Emerging trends in the area of sustainability,.	4
4	Metrics for measurement of sustainability,	4
5	Product lifecycle management and sustainability,	4
6	Case studies on sustainable products	5
7	Eco-design	5
Total Lecture hours (14 times 'L')		28

16. Brief description of tutorial activities:

Module no.	Description	No. of hours
Total Tutorial hours (14 times 'T')		

17. Brief description of Practical / Practice activities

Module no.	Description	No. of hours
1	Collection of case studies of sustainable products and systems	4
2	Review of traditional methods and lifestyle abiding to sustainability	4
3	Identification of sustainability problems with modern systems	4
4	Practicing sustainability in our day life	4
5	Biomimicry	4
6	Designing sustainable Products and systems	8
Total Practical / Practice hours (14 times 'P')		28

18. Brief description of module-wise activities pertaining to self-learning component (Only for 700 / 800 level courses) (Include topics that the students would do self-learning from books / resource materials: Do not Include assignments / term papers etc.)

Module no.	Description
(The volume of self-learning component in a 700-800 level course should typically be 25-30% of the volume covered in classroom contact)	

19. Suggested texts and reference materials

STYLE: Author name and initials, Title, Edition, Publisher, Year.

Hosey Lance Hosey, The shape of Green, Island Press, 2012

Alastair Faud-Luke, The Eco-Design Handbook, Thames And Hudson Ltd, 2009

Eduard Broto, Bamboo Construction & Design, Links International, 2014

Asha Nilani Liyanage , Biomimicry as a metaphor for Perfect integration in sustainability, LAP Lambert Academic Publishing, 2010

20. Resources required for the course (itemized student access requirements, if any)

20.1	Software	Soft ware's for sustainability audit
20.2	Hardware	Computers
20.3	Teaching aids (videos, etc.)	Projector, Audio visual aids
20.4	Laboratory	Tinkering labs, idea generation labs
20.5	Equipment	Hand tools
20.6	Classroom infrastructure	Sitting space for 10 students
20.7	Site visits	Rural Milieu, traditional heritages, sites with natural sustainability
20.8	Others (please specify)	

21. Design content of the course (Percent of student time with examples, if possible)

21.1	Design-type problems	30 % of student time should go in sensitization with concerns related to environment al imbalance.
21.2	Open-ended problems	20% of student time should go in learning form case studies and examples
21.3	Project-type activity	50% of students time should go in designing a product or system for sustainability
21.4	Open-ended laboratory work	
21.5	Others (please specify)	

Date:

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1.	Department/Centre/School proposing the course	IDDC	
2.	Course Title	Transportation Design	
3.	L-T-P structure	2-0-2	
4.	Credits	3	Non-graded Units
5.	Course number	DIR 772	
6.	Course Status (Course Category for Program) Programme Elective		
	Institute Core for all UG programs	(No)	
	Programme Linked Core for:		
	Departmental Core for:		
	Departmental Elective for:		
	Minor Area / Interdisciplinary Specialization Core for:		
	Minor Area / Interdisciplinary Specialization Elective for:		
	Programme Core for:		
	Programme Elective for:	M.Des	
	Open category Elective for all other programs (No if Institute Core)	(Yes)	

7.	Pre-requisite(s)	None
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8.	Status vis-à-vis other courses		
	8.1	List of courses precluded by taking this course (significant overlap)	
	(a)	Significant Overlap with any UG/PG course of the Dept./Centre/ School	
	(b)	Significant Overlap with any UG/PG course of other Dept./Centre/ School	
	8.2	Supersedes any existing course	None

9.	Not allowed for	NA
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10.	Frequency of offering (check one box)	☐ Every semester ☐ I sem ☒ II sem ☐ Either semester
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11.	Faculty who will teach the course : Sumer Singh, Jyoti Kumar
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12.	Will the course require any visiting faculty?	(no)
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13.	Course objectives (about 50 words. "On successful completion of this course, a student should be able to..."): Expertise with Knowledge and skills in a specific area of interest in transportation design.
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14.	Course contents (about 100 words; Topics to appear as course contents in the Courses of Study booklet) (Include Practical / Practice activities): Understanding different segments of design practice in transportation. Different role of designers in Automobile Industry. Design of human powered vehicles, Two wheelers design, Design of four wheelers, future of transportation, Styling, Professional practice: CAS and Clay,
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15. Lecture Outline(with topics and number of lectures)

Module no.	Topic	No. of hours (not exceeding 5h per topic)
1	Role of Designer in Transportation design industry	2
2	Design of human powered vehicles	2
3	Two wheelers design	4

4	Design of four wheelers	5
5	Future of Transportation	5
6	Styling	5
7	Professional practice : CAS and Clay	5
Total Lecture hours (14 times 'L')		28

16. Brief description of tutorial activities:

Module no.	Description	No. of hours
Total Tutorial hours (14 times 'T')		

17. Brief description of Practical / Practice activities

Module no.	Description	No. of hours
1	Hands on working on automotive sketches, Markers	12
2	Hands on working on CAS	8
3	Hands on working on Clay	8
Total Practical / Practice hours (14 times 'P')		28

18. Brief description of module-wise activities pertaining to self-learning component (Only for 700 / 800 level courses) (Include topics that the students would do self-learning from books / resource materials: Do not Include assignments / term papers etc.)

Module no.	Description
(The volume of self-learning component in a 700-800 level course should typically be 25-30% of the volume covered in classroom contact)	

19. Suggested texts and reference materials

STYLE: Author name and initials, Title, Edition, Publisher, Year.

Thom Taylor, Lisa Hallett, How to Draw Cars Like a Pro, Anchor Books, 2008
Ryan Borroff, Tony Lewin, How to Design Cars Like a Pro, Motorbooks International, 2010
Christine Elliot, David Jablonka, Custom Bicycles: A Passionate Pursuit, Images Publishing Group, 2012
Lawrence D Burns, Christopher E Borroni, Reinventing the Automobile: Personal Urban Mobility for the 21st Century, MIT Press (MA), 2010.

20. Resources required for the course (itemized student access requirements, if any)

20.1	Software	Photoshop , Illustrator, Alias auto studio
20.2	Hardware	Touch screen monitors, Automotive markers, Computers
20.3	Teaching aids (videos, etc.)	Projectors, Audio Visual Aids.
20.4	Laboratory	Clay modelling facility, Digital modelling lab, Tape Draw, etc
20.5	Equipment	Type of equipment required, number of access points, etc.
20.6	Classroom infrastructure	Sitting for 10 students (1.5 meter X 1 meter Table)
20.7	Site visits	Automotive design houses, Automotive studios
20.8	Others (please specify)	

21. Design content of the course (Percent of student time with examples, if possible)

21.1	Design-type problems	30 % of student time should go in case studies and understanding the basics of transportation design
21.2	Open-ended problems	20% of student time should go in identifying a specific area to work in
21.3	Project-type activity	50% of students time should go in practice through working on a project.
21.4	Open-ended laboratory work	
21.5	Others (please specify)	

Date:

(Signature of the Head of the Department/ Centre / School)

Date of Approval of Template by Senate	
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1.	Department/Centre/School proposing the course	IDDC	
2.	Course Title	Special Topics in Design	
3.	L-T-P structure	1-0-0	
4.	Credits	1	Non-graded Units
5.	Course number	DIV 820	
6.	Course Status (Course Category for Program) JDS		
	Institute Core for all UG programs	(No)	
	Programme Linked Core for:		
	Departmental Core for:		
	Departmental Elective for:		
	Minor Area / Interdisciplinary Specialization Core for:		
	Minor Area / Interdisciplinary Specialization Elective for:		
	Programme Core for:		
	Programme Elective for:	M.Des	
	Open category Elective for all other programs (No if Institute Core)	(Yes)	

7.	Pre-requisite(s)	None
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8.	Status vis-à-vis other courses		
	8.1 List of courses precluded by taking this course (significant overlap)		
	(a)	Significant Overlap with any UG/PG course of the Dept./Centre/ School	
	(b)	Significant Overlap with any UG/PG course of other Dept./Centre/ School	
	8.2 Supersedes any existing course		

9.	Not allowed for	NA
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10.	Frequency of offering (check one box)	☒ Every semester ☐ I sem ☐ II sem ☐ Either semester
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11.	Faculty who will teach the course : Sumer Singh, S.K.Atrey, Jyoti Kumar
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12.	Will the course require any visiting faculty?	(Yes)
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13.	Course objectives (about 50 words. "On successful completion of this course, a student should be able to..."): Special topics in design.
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14.	Course contents (about 100 words; Topics to appear as course contents in the Courses of Study booklet) (Include Practical / Practice activities): Special topics in design.
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15. Lecture Outline(with topics and number of lectures)

Module no.	Topic	No. of hours (not exceeding 5h per topic)
1		
2		

3		
4		
5		
6		
7		
8		
Total Lecture hours (14 times 'L')		

16. Brief description of tutorial activities:

Module no.	Description	No. of hours
Total Tutorial hours (14 times 'T')		

17. Brief description of Practical / Practice activities

Module no.	Description	No. of hours
1		
2		
3		
4		
5		
Total Practical / Practice hours (14 times 'P')		

18. Brief description of module-wise activities pertaining to self-learning component (Only for 700 / 800 level courses) (Include topics that the students would do self-learning from books / resource materials: Do not Include assignments / term papers etc.)

Module no.	Description
(The volume of self-learning component in a 700-800 level course should typically be 25-30% of the volume covered in classroom contact)	

19. Suggested texts and reference materials
STYLE: Author name and initials, Title, Edition, Publisher, Year.

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20. Resources required for the course (itemized student access requirements, if any)

20.1	Software	
20.2	Hardware	
20.3	Teaching aids (videos, etc.)	
20.4	Laboratory	
20.5	Equipment	
20.6	Classroom infrastructure	
20.7	Site visits	
20.8	Others (please specify)	

21. Design content of the course (Percent of student time with examples, if possible)

21.1	Design-type problems	
21.2	Open-ended problems	
21.3	Project-type activity	
21.4	Open-ended laboratory work	
21.5	Others (please specify)	

Date:

(Signature of the Head of the Department/ Centre / School)

Date of Approval of Template by Senate	
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COURSE TEMPLATE

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1.	Department/Centre/School proposing the course	IDDC	
2.	Course Title	Special Topics in Design 1	
3.	L-T-P structure	3-0-0	
4.	Credits	3	Non-graded Units
5.	Course number	DIV 810	
6.	Course Status (Course Category for Program) JDS		
	Institute Core for all UG programs	(No)	
	Programme Linked Core for:		
	Departmental Core for:		
	Departmental Elective for:		
	Minor Area / Interdisciplinary Specialization Core for:		
	Minor Area / Interdisciplinary Specialization Elective for:		
	Programme Core for:		
	Programme Elective for:	M.Des	
	Open category Elective for all other programs (No if Institute Core)	(Yes)	

7.	Pre-requisite(s)	None
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8.	Status vis-à-vis other courses		
	8.1 List of courses precluded by taking this course (significant overlap)		
	(a)	Significant Overlap with any UG/PG course of the Dept./Centre/ School	
	(b)	Significant Overlap with any UG/PG course of other Dept./Centre/ School	
	8.2 Supersedes any existing course		

9.	Not allowed for	NA
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10.	Frequency of offering (check one box)	☒ Every semester ☐ I sem ☐ II sem ☐ Either semester
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11.	Faculty who will teach the course : Sumer Singh, S.K.Atrey, Jyoti Kumar
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12.	Will the course require any visiting faculty?	(Yes)
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13.	Course objectives (about 50 words. "On successful completion of this course, a student should be able to..."): Special topics in design.
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14.	Course contents (about 100 words; Topics to appear as course contents in the Courses of Study booklet) (Include Practical / Practice activities): Special topics in design.
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15. Lecture Outline(with topics and number of lectures)

Module no.	Topic	No. of hours (not exceeding 5h per topic)
1		
2		

3		
4		
5		
6		
7		
8		
Total Lecture hours (14 times 'L')		

16. Brief description of tutorial activities:

Module no.	Description	No. of hours
Total Tutorial hours (14 times 'T')		

17. Brief description of Practical / Practice activities

Module no.	Description	No. of hours
1		
2		
3		
4		
5		
6		
7		
8		

Total Practical / Practice hours (14 times 'P')		

- 18. Brief description of module-wise activities pertaining to self-learning component** (Only for 700 / 800 level courses) (Include topics that the students would do self-learning from books / resource materials: Do not Include assignments / term papers etc.)

Module no.	Description
(The volume of self-learning component in a 700-800 level course should typically be 25-30% of the volume covered in classroom contact)	

- 19. Suggested texts and reference materials**
STYLE: Author name and initials, Title, Edition, Publisher, Year.

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- 20. Resources required for the course** (itemized student access requirements, if any)

20.1	Software	
20.2	Hardware	
20.3	Teaching aids (videos, etc.)	
20.4	Laboratory	
20.5	Equipment	

20.6	Classroom infrastructure	
20.7	Site visits	
20.8	Others (please specify)	

21. Design content of the course (Percent of student time with examples, if possible)

21.1	Design-type problems	
21.2	Open-ended problems	
21.3	Project-type activity	
21.4	Open-ended laboratory work	
21.5	Others (please specify)	

Date:

(Signature of the Head of the Department/ Centre / School)

Date of Approval of Template by Senate	
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COURSE TEMPLATE

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1.	Department/Centre/School proposing the course	IDDC	
2.	Course Title	Special Topics in Design 2	
3.	L-T-P structure	3-0-0	
4.	Credits	3	Non-graded Units
5.	Course number	DIV 820	
6.	Course Status (Course Category for Program) JDS		
	Institute Core for all UG programs	(No)	
	Programme Linked Core for:		
	Departmental Core for:		
	Departmental Elective for:		
	Minor Area / Interdisciplinary Specialization Core for:		
	Minor Area / Interdisciplinary Specialization Elective for:		
	Programme Core for:		
	Programme Elective for:	M.Des	
	Open category Elective for all other programs (No if Institute Core)	(Yes)	

7.	Pre-requisite(s)	None
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8.	Status vis-à-vis other courses		
	8.1 List of courses precluded by taking this course (significant overlap)		
	(a)	Significant Overlap with any UG/PG course of the Dept./Centre/ School	
	(b)	Significant Overlap with any UG/PG course of other Dept./Centre/ School	
	8.2 Supersedes any existing course		

9.	Not allowed for	NA
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10.	Frequency of offering (check one box)	☒ Every semester ☐ I sem ☐ II sem ☐ Either semester
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11.	Faculty who will teach the course : Sumer Singh, S.K.Atrey, Jyoti Kumar
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12.	Will the course require any visiting faculty?	(Yes)
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13.	Course objectives (about 50 words. "On successful completion of this course, a student should be able to..."): Special topics in design.
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14.	Course contents (about 100 words; Topics to appear as course contents in the Courses of Study booklet) (Include Practical / Practice activities): Special topics in design.
-----	--

15. Lecture Outline(with topics and number of lectures)

Module no.	Topic	No. of hours (not exceeding 5h per topic)
1		
2		

3		
4		
5		
6		
7		
8		
Total Lecture hours (14 times 'L')		

16. Brief description of tutorial activities:

Module no.	Description	No. of hours
Total Tutorial hours (14 times 'T')		

17. Brief description of Practical / Practice activities

Module no.	Description	No. of hours
1		
2		
3		
4		
5		
6		
7		
8		

Total Practical / Practice hours (14 times 'P')		

- 18. Brief description of module-wise activities pertaining to self-learning component** (Only for 700 / 800 level courses) (Include topics that the students would do self-learning from books / resource materials: Do not Include assignments / term papers etc.)

Module no.	Description
(The volume of self-learning component in a 700-800 level course should typically be 25-30% of the volume covered in classroom contact)	

- 19. Suggested texts and reference materials**
STYLE: Author name and initials, Title, Edition, Publisher, Year.

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- 20. Resources required for the course** (itemized student access requirements, if any)

20.1	Software	
20.2	Hardware	
20.3	Teaching aids (videos, etc.)	
20.4	Laboratory	
20.5	Equipment	

20.6	Classroom infrastructure	
20.7	Site visits	
20.8	Others (please specify)	

21. Design content of the course (Percent of student time with examples, if possible)

21.1	Design-type problems	
21.2	Open-ended problems	
21.3	Project-type activity	
21.4	Open-ended laboratory work	
21.5	Others (please specify)	

Date:

(Signature of the Head of the Department/ Centre / School)

Date of Approval of Template by Senate	
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COURSE TEMPLATE

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1.	Department/Centre/School proposing the course	M.Des. (Industrial Design) Programme, IDDC	
2.	Course Title	Design Management and Professional Practice	
3.	L-T-P* structure	3-0-0(*Please read STUDIOS and not Practicals)	
4.	Credits	3	Non-graded Units
5.	Course number	DIL 841	
6.	Course Status (Course Category for Program) DI		
	Institute Core for all UG programs		Yes
	Programme Linked Core for:		
	Departmental Core for:		M.Des(Industrial Design)
	Departmental Elective for:		All Departments
	Minor Area / Interdisciplinary Specialization Core for:		All Departments
	Minor Area / Interdisciplinary Specialization Elective for:		All Departments
	Programme Core for:		M.Des(Industrial Design)
	Programme Elective for:		
	Open category Elective for all other programs (No if Institute Core)		Yes

7.	Pre-requisite(s)	Nil
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8.	Status vis-à-vis other courses		
	8.1 List of courses precluded by taking this course (significant overlap)		
	(a)	Significant Overlap with any UG/PG course of the Dept./Centre/ School	
	(b)	Significant Overlap with any UG/PG course of other Dept./Centre/ School	
	8.2 Supersedes any existing course		

9.	Not allowed for	None
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10.	Frequency of offering (check one box)	☐ Every semester ☒ I sem ☐ II sem ☐ Either semester
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11.	Faculty who will teach the course	S.K.Atreya, Sumer Singh, Jyoti Kumar
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12.	Will the course require any visiting faculty?	(Yes)
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13.	Course objectives (about 50 words. "On successful completion of this course, a student should be able to..."): Objective : To understand design challenges in a corporate framework. Management of design practice as individuals or groups within corporate design setups.
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14.	Course contents (about 100 words; Topics to appear as course contents in the Courses of Study booklet) (Include Practical / Practice activities): Considerations in professional design startups including setting up a design office, getting finances, finding clients, running the office, business correspondence, brief and briefing, feasibility reports, letters of contract. Estimates of design fee as lump sum, hourly basis, consulting, commissioning and royalties. Study of govt. regulations, consumer protection acts, ISI standards, design registrations, patents and copyrights. Professional ethics in design practice. Creativity theory. Integrated product development. Assessing risks and opportunities. Cost cutting in design.
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15. Lecture Outline(with topics and number of lectures)

Module no.	Topic	No. of hours (not exceeding 5h per topic)
1	1. To understand design challenges in a corporate framework. 2. Management of design practice as individuals or groups within corporate design setups.	3
2	3. Considerations in professional design startups including setting up a design office, 4.getting finances, 5.finding clients, 6.running the office, 7.business correspondence, 8. brief and briefing, 9.feasibility reports, 10. letters of contract.	9
3	11.Estimates of design fee as lump sum, hourly basis, consulting, commissioning and royalties.,	3
4	12. Professional ethics in design practice.	9
5	13.Creativity theory. Integrated product development.	9
6	14. Assessing risks and opportunities. Cost cutting in design.	9
Total Lecture hours(14 times 'L')		42

16. Brief description of tutorial activities:

Module no.	Description	No. of hours
Total Tutorial hours(14 times 'T')		

17. Brief description of Practical / Practice activities

Module no.	Description	No. of hours

18. Brief description of module-wise activities pertaining to self-

learning component (Only for 700 / 800 level courses) (Include topics that the students would do self-learning from books / resource materials: Do not Include assignments / term papers etc.)

Module no.	Description
1	Corporate framework
2	Design in practice
3	Management challenges
(The volume of self-learning component in a 700-800 level course should typically be 25-30% of the volume covered in classroom contact)	

19. Suggested texts and reference materials

STYLE: Author name and initials, Title, Edition, Publisher, Year.

Text Book: Kathryn Best – “Design Management: Managing Design Strategy, Process and Implementation” Tim Brown – “Change by design” J.C.Jones – “Design methods” BIS and International Standards Indian, UK, USA, and other international Patents

20. Resources required for the course (itemized student access requirements, if any)

20.1	Software	Nil
20.2	Hardware	Nil
20.3	Teaching aids (videos, etc.)	LCD Projector, Interactive Board
20.4	Laboratory	Nil
20.5	Equipment	Nil
20.6	Classroom infrastructure	Video Projector, interactive board
20.7	Site visits	Visits to see industry, design houses, professionals, Group size about 80 students
20.8	Others (please specify)	Talking to various professionals.

21. Design content of the course(Percent of student time with examples, if possible)

21.1	Design-type problems	
21.2	Open-ended problems	
21.3	Project-type activity	
21.4	Open-ended laboratory work	
21.5	Others (please specify)	

Date:

(Signature of the Head of the Department/ Centre / School)

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COURSE TEMPLATE

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1.	Department/Centre/School proposing the course	M.Des. (Industrial Design), IDDC	
2.	Course Title	Exhibitions and Environmental Design	
3.	L-T-P* structure	2-0-2 (*Please read STUDIOS and not Practicals)	
4.	Credits	3	Non-graded Units Please fill appropriate details in S. No. 21
5.	Course number	DIP 712	
6.	Course Status (Course Category for Program) DI		
	Institute Core for all UG programs	(No)	
	Programme Linked Core for:		
	Departmental Core for:	M.Des . (Industrial Design)	
	Departmental Elective for:		
	Minor Area / Interdisciplinary Specialization Core for:	All Departments	
	Minor Area / Interdisciplinary Specialization Elective for:	All Departments	
	Programme Core for:	M.Des . (Industrial Design)	
	Programme Elective for:	All Departments	
	Open category Elective for all other programs (No if Institute Core)	Yes	

7.	Pre-requisite(s)	Nil
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8.	Status vis-à-vis other courses		
	8.1	List of courses precluded by taking this course (significant overlap)	
	(a)	Significant Overlap with any UG/PG course of the Dept./Centre/ School	
	(b)	Significant Overlap with any UG/PG course of other Dept./Centre/ School	
	8.2	Supersedes any existing course	

9.	Not allowed for	None
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10.	Frequency of offering (check one box)	☐ Every semester ☐ I sem ☒ II sem ☐ Either semester
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11.	Faculty who will teach the course	S.K.Atreja, Sumer Singh, Jyoti Kumar
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12.	Will the course require any visiting faculty?	(No)
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13.	Course objectives (about 50 words. "On successful completion of this course, a student should be able to..."): To design environments including building interiors, building exterior environments, pavillions and exhibitions.
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14.	Course contents History of exhibition design. Human movements and exhibition plans. Concept of physical and psychological space. Design of physical environment for human comfort and function. Study of fixtures and fittings. Design and use of modular and fixed elements in display design. Lights and illumination systems. Types of lights. Study of indoor and outdoor lighting requirements. Innovative materials and processes in exhibitions. Outdoor and indoor land-scaping . Types of pavilions. Space requirement calculation in design. Design of murals, artifacts, exhibits and models. Use of background, negative space, foreground, proportion and scale in exhibition composition. Exercises and projects.
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15. Lecture Outline(with topics and number of lectures)

Module no.	Topic	No. of hours (not exceeding 5h per topic)
1	History of exhibition design. Human movements and exhibition plans.	1
2	Concept of physical and psychological space.Design of physical environment for human comfort and function.	1
3	Design and use of modular and fixed elements in display design.	2
4	Lights and illumination systems. Types of lights.Study of indoor and outdoor lighting requirements	2
5	Innovative materials and processes in exhibitions.	1
6	Outdoor and indoor land-scaping . Types of pavilions. Space requirement calculation in design.	1
7	Design of murals, artifacts, exhibits and models.	4
8	Use of background, negative space, foreground, proportion and scale in exhibition composition. Exercises and projects.	2
Total Lecture hours(14 times 'L')		14

16. Brief description of tutorial activities:

Module no.	Description	No. of hours
Total Tutorial hours(14 times 'T')		

17. Brief description of Practical / Practice activities

Module no.	Description	No. of hours
1	Studies of exhibitions and man-made environments	2
2	Space Planning	2
3	Lighting	8
4	Environment building and Landscaping, Pavillions	6
5	Design of Murals, artifacts, exhibits and models.	8
6	Design Exercises and projects.	2
Total Practical / Practice hours(14 times 'P')		28

18. Brief description of module-wise activities pertaining to self-learning component

(Only for 700 / 800 level courses) (Include topics that the students would do self-learning from books / resource materials: Do not Include assignments / term papers etc.)

Module no.	Description
1	Study of Exhibitions and environments
2	Space management & Pavillion design
3	Design of artifacts & Displays
(The volume of self-learning component in a 700-800 level course should typically be 25-30% of the volume covered in classroom contact)	

19. Suggested texts and reference materials

STYLE: Author name and initials, Title, Edition, Publisher, Year.

Reference Books:

John Portman and Jonathan Barnett "Architect as Developer"

David Dernie – "Exhibition Design"

Bureau of Indian Standards - "Handbook on Functional Requirement of Buildings"

Don Norman- "The Design of Everyday Things"

"Time Saver Standards"

Neufert – "Architectural Standards"

Victor Papanek – "The Green Imperative: Ecology and Ethics in Design and Architecture"

Autodesk Press – "Inside 3D Studio"

20. Resources required for the course (itemized student access requirements, if any)

20.1	Software	3D Studio
20.2	Hardware	3D Printer
20.3	Teaching aids (videos, etc.)	Slides, Video, Computer / Lap-top
20.4	Laboratory	CAD Lab
20.5	Equipment	CAD Workstations, Virtual Reality Equipment
20.6	Classroom infrastructure	Video Projector, interactive board
20.7	Site visits	Visits to see design houses, professionals, Tool Rooms, Group size about 80 students
20.8	Others (please specify)	Talking to various professionals.

21. Design content of the course(Percent of student time with examples, if possible)

21.1	Design-type problems	50 % designing products on CAD workstations
21.2	Open-ended problems	
21.3	Project-type activity	30% Design exercises
21.4	Open-ended laboratory work	20% Sketching, shaping, forming, Rapid prototyping
21.5	Others (please specify)	

Date:

(Signature of the Head of the Department/ Centre / School)

Date of Approval of Template by Senate	
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1.	Department/Centre/School proposing the course	M.Des. (Industrial Design) Programme, IDDC	
2.	Course Title	Media Studies	
3.	L-T-P* structure	2-0-2 (*Please read STUDIOS and not Practicals)	
4.	Credits	3	Non-graded Units
5.	Course number	DIR812	
6.	Course Status (Course Category for Program) (list program codes: eg., EE1, CS5, etc.)DI		
	Institute Core for all UG programs		(Yes / No)
	Programme Linked Core for:		
	Departmental Core for:		M.Des&M.Des by Research
	Departmental Elective for:		All Departments
	Minor Area / Interdisciplinary Specialization Core for:		All Departments
	Minor Area / Interdisciplinary Specialization Elective for:		All Departments
	Programme Core for:		M.Des&M.Des by Research
	Programme Elective for:		All Departments
	Open category Elective for all other programs (No if Institute Core)		Yes

7.	Pre-requisite(s)	Nil
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8.	Status vis-à-vis other courses		
	8.1 List of courses precluded by taking this course (significant overlap)		
	(a)	Significant Overlap with any UG/PG course of the Dept./Centre/ School	
	(b)	Significant Overlap with any UG/PG course of other Dept./Centre/ School	
	8.2 Supersedes any existing course		

9.	Not allowed for	None
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10.	Frequency of offering (check one box)	☐ Every semester ☒ I sem ☐ II sem ☐ Either semester
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11.	Faculty who will teach the course	S.K.Atreya, Sumer Singh, Jyoti Kumar
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12.	Will the course require any visiting faculty?	(Yes/no)
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13.	Course objectives (about 50 words. “On successful completion of this course, a student should be able to...”): To learn all new forms of media including photography, videography, animation, cyber-media and print media for design and communication. To explore unconventional media eg. brainwaves, EEG, telepathy and astral.
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14.	Course contents (about 100 words; Topics to appear as course contents in the Courses of Study booklet) (Include Practical / Practice activities):To enable designers to use different media optimally. Principles and processes of photography, videography, print and animation. Study of design constraints and affordances in differ media. Exercises in photography, videography, print, animation Cinematography etc. Design of corporate identity programs.
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15. Lecture Outline(with topics and number of lectures)

Module no.	Topic	No. of hours (not exceeding 5h per topic)
1	Photography, Color, Light and shadows, Contrast, equipment, lenses, filters, film Vs digital media, Photo editing, Special effects	4
2	Videography, Scripting, joining, special effects and equipment	4
3	Print media,	4
4	Animation	4
5	Cinematography	4
6	Cyber media, Communication amongst animal kingdom	4
7	Exploring unconventional communication media eg. PrekshaDhyanYoga, brainwaves, EEG, telepathy, astral.	4
Total Lecture hours(14 times 'L')		28

16. Brief description of tutorial activities:

Module no.	Description	No. of hours
Total Tutorial hours(14 times 'T')		

17. Brief description of Practical / Practice activities

Module no.	Description	No. of hours
1	Exercises in Photography	2
2	Exercises in Videography	4
3	Exercises in Print media,	2
4	Exercises in Animation	2
5	Exercise in Cinematography	6
6	Exploring Cyber media, Communication amongst animal kingdom	6
7	Exploring unconventional communication media eg. PrekshaDhyan Yoga, brainwaves, EEG, telepathy, astral.	6
Total Practical / Practice hours(14 times 'P')		28

18. Brief description of module-wise activities pertaining to self-

learning component (Only for 700 / 800 level courses) (Include topics that the students would do self-learning from books / resource materials: Do not Include assignments / term papers etc.)

Module no.	Description
1	Using Photography, Videography, Print Media, Animation and Cinematography
2	Function and Comfort
3	Styling
4	Needs of specific people such as milkman, vendors, ambulance, rural people, postman, sportsmen
5	Needs of Mass transportation – bus, rail, boat, ship, helicopters, airplanes, space shuttles
(The volume of self-learning component in a 700-800 level course should typically be 25-30% of the volume covered in classroom contact)	

19. Suggested texts and reference materials

STYLE: Author name and initials, Title, Edition, Publisher, Year.

Reference Books:

Julian Happian-Smith, Transport Research Laboratory (TRL), UK “Introduction to Modern Vehicle Design”

Ian Callum, Tony Lewin, Ryan Borroff – “How to Design Cars like a Pro”

Rowenna Read – “Form Design”

Granada london – “How Things Work – the universal Encyclopedia of Machines”

Victor Papanek – “Why things don’t work”

Readings:

Victor Papanek – “Design for human scale”

Design Standards of various products and countries such as BIS

20. Resources required for the course (itemized student access requirements, if any)

20.1	Software	3D Studio and Maya by Autodesk
20.2	Hardware	Models for animation
20.3	Teaching aids (videos, etc.)	Slides, Video
20.4	Laboratory	Camera, Video, Model making
20.5	Equipment	Model making workshop, Photography equipment, Video Cameras, Video Editing Table
20.6	Classroom infrastructure	Video Projector, interactive board
20.7	Site visits	Visits to indoor studios and outdoor locations, and Media studios. Group size about 40 students
20.8	Others (please specify)	

21. Design content of the course(Percent of student time with examples, if possible)

21.1	Design-type problems	50 % Using media for Corporate identity building.
21.2	Open-ended problems	
21.3	Project-type activity	30% Experimentation with unexplored media techniques
21.4	Open-ended laboratory work	20% Exploring unconventional media possibilities
21.5	Others (please specify)	

Date:

(Signature of the Head of the Department/ Centre / School)

Date of Approval of Template by Senate	
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COURSE TEMPLATE

(Please avoid changing the number of tables, rows and columns or text in dark black, but fill only the columns relevant to the template by editing the columns in grey letters or blank columns: this would help in automating the processing of template information for curricular use)

1.	Department/Centre/School proposing the course	M.Des. (Industrial Design) Programme, IDDC		
2.	Course Title	Vehicle Design		
3.	L-T-P* structure	2-0-2 (*Please read STUDIOS and not Practicals)		
4.	Credits	3	Non-graded Units	Please fill appropriate details in S. No. 21
5.	Course number	DIR 762		
6.	Course Status (Course Category for Program) DI			
	Institute Core for all UG programs		Yes	
	Programme Linked Core for:			
	Departmental Core for:		M.Des	
	Departmental Elective for:		All departments	
	Minor Area / Interdisciplinary Specialization Core for:		M.Des	
	Minor Area / Interdisciplinary Specialization Elective for:		All departments	
	Programme Core for:		M.Des	
	Programme Elective for:		All departments	
	Open category Elective for all other programs (No if Institute Core)		Yes	

7.	Pre-requisite(s)	Nil
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8.	Status vis-à-vis other courses		
	8.1 List of courses precluded by taking this course (significant overlap)		
	(a)	Significant Overlap with any UG/PG course of the Dept./Centre/ School	No
	(b)	Significant Overlap with any UG/PG course of other Dept./Centre/ School	No
	8.2 Supersedes any existing course		

9.	Not allowed for	None
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10.	Frequency of offering (check one box)	☐ Every semester ☐ I sem ☒ II sem ☐ Either semester
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11.	Faculty who will teach the course S.K.Atreya, Sumer Singh, Jyoti Kumar
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12.	Will the course require any visiting faculty?	(Yes)
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13.	Course objectives (about 50 words. "On successful completion of this course, a student should be able to..."): To learn development of innovative transport vehicles and their styling. India is a vast country having large population and diverse requirements. Transportation in rural as well as urban areas is one of the major challenges here. This course prepares students for design and styling of cars, trucks, railway coaches and locomotives.
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14.	Course contents (about 100 words; Topics to appear as course contents in the Courses of Study booklet) (Include Practical / Practice activities):History of transportation, technology trends in transportation and futuristic predictions. Types of personal vehicles, mass transportation vehicles, their benefits and challenges in design. Trends and styling of two wheelers and four wheelers. Material and finish considerationsin styling. Use of mood boards and cultural trends in transportation design. Vehicle design for rural India. Design projects and exercises.
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15. Lecture Outline(with topics and number of lectures)

Module no.	Topic	No. of hours (not exceeding 5h per topic)
1	History Of Transportation.	1
2	Technology Trends In Transportation And Futuristic Predictions	1
3	Types Of Innovative Personal Vehicles,.	2
4	Mass Transportation VehiclesTheir Benefits And Challenges In Design.	2
5	Styling Of Two Wheelers And Four Wheelers	6
6	Material And Finish Consideration in Styling.	2
7	Use Of Mood Boards And Cultural Trends In Transportation Design.	2
8	Vehicle Design For Rural India.	6
9	Design For Railways, Waterways And Airways	6
Total Lecture hours(14 times 'L')		28

16. Brief description of tutorial activities:

Module no.	Description	No. of hours
Total Tutorial hours(14 times 'T')		

17. Brief description of Practical / Practice activities

Module no.	Description	No. of hours
1	Studies in transportation and technology	2
2	Personal vehicles	4
3	Mass transportation vehicles	2
4	Styling of 2-wheelers and 4-wheelers	6
5	Developing Mood board for transportation projects	2
6	Design for rural transportation	6
7	Design for railways, waterways and for airways	6
Total Practical / Practice hours(14 times 'P')		28

18. Brief description of module-wise activities pertaining to self-

learning component (Only for 700 / 800 level courses) (Include topics that the students would do self-learning from books / resource materials: Do not Include assignments / term papers etc.)

Module no.	Description
1	Vehicle history, technology, development and pitfalls
2	Function and Comfort
3	Styling
4	Needs of specific people such as milkman, vendors, ambulance, rural people, postman, sportsmen
5	Needs of Mass transportation – bus, rail, boat, ship, helicopters, airplanes, space shuttles
(The volume of self-learning component in a 700-800 level course should typically be 25-30% of the volume covered in classroom contact)	

19. Suggested texts and reference materials

STYLE: Author name and initials, Title, Edition, Publisher, Year.

Reference Books:

Julian Hapian-Smith, Transport Research Laboratory (TRL), UK “Introduction to Modern Vehicle Design”

Ian Callum, Tony Lewin, Ryan Borroff – “How to Design Cars like a Pro”

Rowenna Read – “Form Design”

Granada london – “How Things Work – the universal Encyclopedia of Machines”

Victor Papanek – “Why things don’t work”

Readings:

Victor Papanek – “Design for human scale”

Design Standards of various products and countries such as BIS

20. Resources required for the course (itemized student access requirements, if any)

20.1	Software	AutoCAD & Alias Studio by Autodesk
20.2	Hardware	Model making in various materials
20.3	Teaching aids (videos, etc.)	Slides, Video
20.4	Laboratory	Camera, Video, Model making
20.5	Equipment	Model making workshop
20.6	Classroom infrastructure	Video Projector, interactive board
20.7	Site visits	Visits to see exhibitions, design studios, Auto industry Group size about 80 students
20.8	Others (please specify)	

21. Design content of the course(Percent of student time with examples, if possible)

21.1	Design-type problems	50 % Styling and prototyping.
21.2	Open-ended problems	
21.3	Project-type activity	40% Design of innovative vehicles
21.4	Open-ended laboratory work	10% Developing mood boards
21.5	Others (please specify)	

Date:

(Signature of the Head of the Department/ Centre / School)

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