

Bachelor of Design

Applicable July 2018 Onwards

CURRICULUM

Credit Requirements: 160

8 Semesters



School of Design

Doon University, Dehradun

Program Outcomes (POC)

Our undergraduate program is aimed at equipping students with skills to:

- Apply critical and analytical skills and methods to the identification, evaluation and resolution of problems
- Engage confidently in self-directed study and research
- Communicate ideas effectively in written, graphic and oral formats
- Operate effectively in multicultural and diverse environments
- Use appropriate technologies
- Recognize and understand the ethical responsibilities of individuals and organizations in society

Program Specific Outcomes (PSOC)

Our curriculum across four years will help students gain:

- The ability to solve design problems, including the skills of problem identification, research and information gathering, analysis, generation of alternative solutions, prototyping and user testing, and evaluation of outcomes.
- The ability to describe and respond to clients and contexts that design solutions must address, including recognition of the physical, cognitive, cultural, and social human factors that shape design decisions.
- The ability to create and develop visual form in response to design problems, including understanding principles of visual organization/composition and application.
- An understanding of tools, technologies, and materials, including their roles in creating, producing, and using visual forms. This includes both traditional and digital media.
- Functional knowledge of design history, theory, and criticism, including understanding the similarities, differences, and relationships among the various design specializations.
- By applying a broad knowledge of design across a range of disciplines with in-depth knowledge in at least one area of study
- Through the application of project-based learning, incorporating critical, analytical and methodological skills relevant to the identification and resolution of problems in practical and creative ways
- By applying appropriate methods of research and investigation in addressing problems
- By demonstrating skills and use of technologies to enable the production of designed outcomes appropriate to the relevant discipline
- An understanding of basic business practices, including the ability to organize design projects and to work productively as a member of teams.
- Experiences that encourage familiarity with a broad variety of design work in various specializations and media.
- Understanding field realities by engaging with exposure and projects in the real world.

DETAILED COURSE STRUCTURE

FOUNDATION OVERVIEW

SEMESTER 1				
SDF-113	Representation in Design I: Sketching, Analytical Drawing & Geometry	4	CORE	STUDIO
SDF-104	Introduction to Materials & Workshop Skills	4	CORE	STUDIO
SDF-103	Form Studies I: Colour & Composition	4	CORE	STUDIO
SDF-114	Creative Thinking	2	CORE	STUDIO
SDS-101	SS/Man, Society & Design	2	GE	THEORY
EES-111	Introduction to Environmental Studies	4	AECC	THEORY
	TOTAL	20		

SEMESTER 2				
SDF-115	Representation in Design II: Sketching, Photography & Computer Graphics	6	CORE	STUDIO
SDF-108	Form Studies II: 3D Geometry & Form in Space	4	CORE	STUDIO
SDF-106	Design Concerns	4	CORE	STUDIO
SDF-116	History of Design	2	CORE	THEORY

SDS-102	SS/Art Appreciation	2	GE	THEORY
ENG-151	Communication in English	2	AECC	THEORY
	TOTAL	20		

Bachelor of Design

4 Year Programme

PRODUCT DESIGN OVERVIEW

SEMESTER 3

SDP-201	Form Derivation I	4	CORE	STUDIO
SDP-202	Material Studies I: Traditional Materials	2	DSE	STUDIO
SDP-203	Product Visualisation & Orthography	2	CORE	STUDIO
SDP-204	Ergonomics II	2	DSE	THEORY
SDP-205	Design Project I: Simple Product Design & Model Making	8	CORE	CORE/PROJECT
SDS-201	SS/Film Appreciation	2	GE	THEORY
	TOTAL	20		

SEMESTER 4

SDP-206	Form Derivation II	4	CORE	STUDIO
SDP-207	Material Studies II: New Materials	2	DSE	STUDIO
SDP-208	CAD I	2	SEC	STUDIO
SDP-209	Design Project II: Interface Design & Ergonomics	8	CORE/PROJECT	CORE/PROJECT
SDS-202	SS/Policy & Politics	2	GE	THEORY
SDP-210	Design Exposure Visit	2		VISIT
	TOTAL	20		

SEMESTER 5

SDP-301	Technical Studies I: Mechanisms & Concepts	4	CORE	STUDIO/THEORY
SDP-302	Advanced Prototyping	4	CORE	STUDIO
SDP-303	Documentation of Informal Economies of Production	2	DSE	DOCUMENTATION
SDP-304	Design Project III: Space Design	8	CORE/PROJECT	CORE/PROJECT
SDS-301	SS/Semantics & Semiology	2	SKE	THEORY

	TOTAL	20		
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SEMESTER 6

SDP-305	Value Engineering & Analysis	6	DSE	STUDIO/THEORY
SDS-303	Portfolio Building	2	CORE	STUDIO
SDP-306	Industrial Visit	2	SKE	VISIT
SDP-307	Design Project IV: Technically Complex Project	8	CORE/PROJECT	STUDIO
SDS-302	SS/Media & Hegemonies	2	GE	THEORY
	TOTAL	20		

SEMESTER 7

SDP-401	Internship (Summer Vacation)	4	INTERNSHIP	INTERNSHIP
SDS-402	Design Management & Entrepreneurship	2	GE	THEORY
SDP-402	Technical Studies II: Electricals & Electronics	2	DSE	THEORY
SDP-403	Design Project V: Social Design	8	CORE/PROJECT	STUDIO
SDS-403	Preparation for Thesis	2	CORE	THEORY
SDS-401	SS/Design for Social Change	2	GE	THEORY
	TOTAL	20		

SEMESTER 8

SDS-404	Colloquium	2	CORE	DOCUMENTATION
SDP-404	Design Thesis	18	DISSERTATION	STUDIO/LIVE PROJECT
	TOTAL	20		

Bachelor in Design

4 Year Programme

GRAPHIC DESIGN OVERVIEW

SEMESTER 3				
SDG-201	Illustration I	4	CORE	STUDIO
SDG-202	Introduction to Typography	4	CORE	STUDIO
SDG-203	Advanced Photography	2	CORE	STUDIO
SDG-204	Design Project I: Publication Design & Printing	8	CORE	STUDIO
SDS-201	SS/Film Appreciation	2	GE	THEORY
	TOTAL	20		

SEMESTER 4				
SDG-205	Moving Graphics	2	CORE	STUDIO
SDG-206	Introduction to Storyboarding	2	DSE	STUDIO
SDG-207	Introduction to Animation	4	DSE	STUDIO
SDG-208	Design Project II: Typography Design	8	CORE/PROJECT	STUDIO
SDS-202	SS/Policy & Politics	2	GE	THEORY

SEMESTER 5				
SDG-301	Illustration 2: Digital	4	CORE	STUDIO
SDG-302	Digital Design	4	CORE	STUDIO
SDG-303	Design Project III: Space Design	8	CORE/PROJECT	STUDIO
SDG-304	Self Study (Summers)	2	CORE	DOCUMENTATION
SDS-301	SS/Semantics & Semiology	2	GE	THEORY
	TOTAL	20		

SEMESTER 6				
SDG-306	Introduction to Video & Scripting-Writing	4	DSE	STUDIO
SDG-307	Packaging Design	4	CORE	STUDIO
SDS-303	Portfolio Building	2	CORE	STUDIO

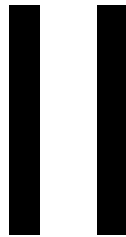
SDG-308	Design Project IV	8	CORE/PROJECT	STUDIO
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SEMESTER 7

SDG-401	Internship (Summer Vacation)	4	INTERNSHIP	INTERNSHIP
SDS-402	Design Managment&Entrepreneurship	2	GE	THEORY
SDG-402	Copy Writing	2	DSE	STUDIO
SDG-403	Design Project V: Social Design	8	CORE/PROJECT	STUDIO
SDS-403	Preparation for Thesis	2	CORE	THEORY
SDS-401	SS/Design for Social Change	2	GE	THEORY
	TOTAL	20		

SEMESTER 8

SDS-404	Colloquium	2	CORE	DOCUMENTATION
SDG-404	Design Thesis	18	DISSERTATION	STUDIO/LIVE PROJECT
	TOTAL	20		



DETAILED COURSE OUTCOMES

SCHOOL OF DESIGN
Bachelor of Design

YEAR 1

Course Code:	SDF 113	Course Title:	Representation in Design I: Sketching, Analytical Drawing & Geometry
Course Outcomes			
The student at the completion of the course will be able to:			
<ul style="list-style-type: none"> • Fundamentals of sketching • Understanding of freehand drawing techniques • Basic understanding of sketching tools • Understanding of one, two Point Perspective, Shading rendering • Anatomy drawing 			
Course Code:	SDF 103	Course Title:	Form Studies I: Colour & Composition
Course Outcomes			
The student at the completion of the course will be able to:			
<ul style="list-style-type: none"> • Understand Elements & Principles of Design • Understand Color Theory • Understand Gestalt Theory • Translation of the abstract into 2D Form 			
Course Code:	SDF 104	Course Title:	Introduction to Materials & Workshop Skills
Course Outcomes			
The student at the completion of the course will be able to:			
<ul style="list-style-type: none"> • Exploring the use of materials. • Understand material properties. • Materials explored will include Plaster of Paris, Wood, Metal Sheet and Polystyrene & Acrylic. • Use of Hand tools. • Transform material properties into function. 			
Course Code:	SDF 114	Course Title:	Creative Thinking
Course Outcomes			
The student at the completion of the course will be able to:			
<ul style="list-style-type: none"> • Understand the role of creativity and innovation in your own work and in other disciplines. • Understand the importance of diverse ideas, and to convey that understanding to others. 			
Course Code:	SDS 101	Course Title:	Man, Society & Design
Course Outcomes			

The student at the completion of the course will be able to:

- Understanding Culture, Anthropology & Functionalism
- Genes, their evolution & population genetics; Biology in the present – living people
- Ethnographic research; Language & Communication; Process of cultural Change
- Design elements in anthropological studies; anatomy

Course Code:	SDF 115	Course Title:	Representation in Design II: Sketching, Photography & Computer Graphics
Course Outcomes			
The student at the completion of the course will be able to:			
<ul style="list-style-type: none"> • Emphasis on addition and creation of detail while drawing • Generate more complex perspective views including 1, 2 point ones in freehand drawing. • Rendering Techniques. • Use of Pens. 			

Course Code:	SDF 108	Course Title:	Form Studies II: 3D Geometry & Form in Space
Course Outcomes			
The student at the completion of the course will be able to:			
<ul style="list-style-type: none"> • Change 2D into 3D forms • introduced to the concept of geometric and organic volumes. • Properties of basic solids like cube, cone, pyramid, cylinder and prism • Platonic and Archimedean solids 			

Course Code:	SDF 106	Course Title:	Design Concerns
Course Outcomes			
The student at the completion of the course will be able to:			
<ul style="list-style-type: none"> • A broad overview of design & creative approaches to problem solving • Ability to inter-relate concepts 			

Course Code:	SDF 116	Course Title:	History of Design
Course Outcomes			
The student at the completion of the course will be able to:			
<ul style="list-style-type: none"> • Understand the history of design as a distinct discipline • History of design in the West • History of design in the Indian context 			

Course Code:	SDS 102	Course Title:	Art Appreciation
Course Outcomes			
The student at the completion of the course will be able to:			
<ul style="list-style-type: none"> • Appreciation entails valuing, positive or negative. • Art Appreciation allows one to construct meaning and articulate thoughts about feelings and perceptions. 			

- This course attempts to map philosophical terrains of 'art appreciation'.

YEAR 2

Course Code:	SDG 202	Course Title:	Introduction to Typography
Course Outcomes			
The student at the completion of the course will be able to:			
<ul style="list-style-type: none"> • Fundamental of typographic principles • Elements of typography like terminology & measurement, history and evolution of type, printing technologies. 			

Course Code:	SDG 203	Course Title:	Advanced Photography
Course Outcomes			
The student at the completion of the course will be able to:			
<ul style="list-style-type: none"> • The aim is to build skills as well as sensitivity to photography • In Depth photography skill • Communication of ideas and context 			

Course Code:	SDS 201	Course Title:	Film Appreciation
Course Outcomes			
The student at the completion of the course will be able to:			
<ul style="list-style-type: none"> • Aimed at exploring the value of film viewing in context of Design • Understand the way that content, form, and contexts work together to create meaning in film 			

Course Code:	SDG 201	Course Title:	Illustration I
Course Outcomes			
The student at the completion of the course will be able to:			
<ul style="list-style-type: none"> • Understand the basic approach to drawing and composition as a means of story-telling or information giving. • Effectively communicate an idea, explain a concept or tell a story through pictures . 			

Course Code:	SDG 204	Course Title:	Design Project I: Publication Design & Printing
Course Outcomes			
The student at the completion of the course will be able to:			
<ul style="list-style-type: none"> • Understand the process of printing. • Fundamentals of page layout • Explore Prints and posters • Development of skills and advanced knowledge of publishing software, with emphasis on the maintenance of visual continuity in documents for publication 			

Course Code:	SDP 201	Course Title:	Form Derivation I
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Course Outcomes	
The student at the completion of the course will be able to:	
<ul style="list-style-type: none"> • Introduction to principles of form and aesthetics • Principles of two dimensional form and three dimensional form • Generating new form and application in product design 	

Course Code:	SDP 205	Course Title:	Design Project I: Simple Product Design
Course Outcomes			
The student at the completion of the course will be able to:			
<ul style="list-style-type: none"> • Understand form derivation, ergonomics and material studies in the context of tangible products • Designing simple products that meets user needs. 			

Course Code:	SDG 207	Course Title:	Digital 3D Modeling
Course Outcomes			
The student at the completion of the course will be able to:			
<ul style="list-style-type: none"> • Understand 3D Software • Learn 3D modeling, texturing, lighting, camera, rendering. • Basic animation- keyframe animation & rendering 			

Course Code:	SDP 209	Course Title:	Design Project II: Interaction Design
Course Outcomes			
The student at the completion of the course will be able to:			
<ul style="list-style-type: none"> • Basic Concepts in Human Computer Interaction. • Basic Knowledge about principles and method of Interaction design • Aims at imparting knowledge and furthering research into the domain of designing interactive experiences in media, products and computer design applications. 			

Course Code:	SDP 210	Course Title:	Design Exposure Visit
Course Outcomes			
The student at the completion of the course will be able to:			
<ul style="list-style-type: none"> • Develop sensitivity to design in our environment • Develop sensitivity to socio-cultural contexts of design • Field learnings and experiences in design 			

Course Code:	SDS 202	Course Title:	Policy & Politics
Course Outcomes			
The student at the completion of the course will be able to:			
<ul style="list-style-type: none"> • Introducing the students to basic concepts that form part of an everyday political life of a human. 			

Course Code:	SDG 205	Course Title:	Moving Graphics & Storyboarding
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Course Outcomes	
The student at the completion of the course will be able to:	
<ul style="list-style-type: none"> • Understanding storyboarding and planning • Basics of after Effects/Premiere keyframe concepts and principles. • Understand Motion Graphics . 	

Course Code:	SDP 206	Course Title:	Form Derivation II
Course Outcomes			
The student at the completion of the course will be able to:			
<ul style="list-style-type: none"> • Introduction to advanced principles of form and aesthetics • Principles of form families and house styles • Generating new form refining existing forms 			

YEAR 3

Course Code:	SDG 301	Course Title:	Digital Illustration
Course Outcomes			
The student at the completion of the course will be able to:			
<ol style="list-style-type: none"> 1. Create illustrations in a digital environment and learn rendering skills. 2. Learn use of computers as a medium and as an additional tool for illustrators. 3. How to translate hand drawn items into digital products 			

Course Code:	SDG 303/SDP 304	Course Title:	Design Project III: Space Design
Course Outcomes			
The student at the completion of the course will be able to:			
<ol style="list-style-type: none"> 1. Understand physical spaces and the importance of designing them to fit human comfort and wellness. 2. Importance of space ergonomics and sustainability in space. 3. Understand layouts, materials and budgets while working with space. 			

Course Code:	SDG 304/SDP 303	Course Title:	Self Study
Course Outcomes			
Help students look at folk art or an informal economic activity in a holistic context and understand how representation is an important mirror of society and culture.			

Course Code:	SDS 301	Course Title:	Semantics & Semiology
Course Outcomes			
The student at the completion of the course will be able to:			
<ol style="list-style-type: none"> 1. Understand natural human language and its evolution. 2. Importance of language and its understanding in context of product and graphic design. 3. Look at word and their meanings beyond surface level and understand language in context. 			

Course Code:	SDP 302	Course Title:	Advanced Prototyping
Course Outcomes			
The student at the completion of the course will be able to:			
<ol style="list-style-type: none"> 1. Understand methods and ways of prototyping for creating products. 2. Understand materials and their usage in prototyping and deciding how best they can be used to simulate a real life product with them. 3. Create a prototype that either looks, feels or functions like the original product. 			

Course Code:	SDG 307	Course Title:	Packaging Design
Course Outcomes			
The student at the completion of the course will be able to:			
<ol style="list-style-type: none"> 1. Understanding of what goes in packaging design. 2. Understand the importance of packaging innovation on the lines of creating environmentally friendly and sustainable packaging. 3. Ability to create packaging prototypes along with the visual component utilizing graphic design inputs. 			

Course Code:	SDS 303	Course Title:	Portfolio Building
Course Outcomes			
The student at the completion of the course will be able to:			
<ol style="list-style-type: none"> 1. Learn to present their work effectively and efficiently to prospective clients and employers. 2. Learn to organize and present their work, brand themselves and present their work across media. 3. Create their own portfolio. 			

Course Code:	SDG 308	Course Title:	Design Project IV: Identity Design
Course Outcomes			
The student at the completion of the course will be able to:			
<ol style="list-style-type: none"> 1. Develop understanding of Brands & Brand Identity Design. 2. Understand how to approach and develop branding and collaterals. 			

Course Outcomes			
The student at the completion of the course will be able to:			
<ol style="list-style-type: none"> 1. Analyze how the media can affect and influence our daily lives. 2. Consensus. Basic knowledge of the communication system, the uses of media, and means of objectively evaluating media performance in light of media problems. 			

Course Code:	SDS 302	Course Title:	SS/Media and Hegemonies
Course Outcomes			
The student at the completion of the course will be able to:			
<ol style="list-style-type: none"> 1. Understanding Of Scriptwriting And Video. 2. Creating A Screenplay. 3. Write a screenplay for and create and edit a short film. 			

Course Code:	SDP 307	Course Title:	Complex Product Design
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Course Outcomes	
The student at the completion of the course will be able to:	
1. Design technically complex products with sound demonstration of design skills as well as dealing with technical complexity	
2. Integrate knowledge of manufacturing systems into product design	
3. Understand market and customer requirements and translate them into a comprehensive design brief	

YEAR 4

Course Code:	SDG 401/SDP 401	Course Title:	Internship (Summer Vacation)
Course Outcomes			
The student at the completion of the course will be able to:			
1. Learn about the industry and its culture.			
2. Understand teamwork and working with different units of an institution.			
3. Real time exposure to working in a design studio.			

Course Code:	SDG 403/SDP 403	Course Title:	Design Project V : Social Design
Course Outcomes			
The student at the completion of the course will be able to:			
1. Understand the importance of participation of each stakeholder in design.			
2. Create a project based on in-depth analysis via participation of local populace in a rural community.			

Course Code:	SDS 402	Course Title:	Design Management & Entrepreneurship
Course Outcomes			
The student at the completion of the course will be able to:			
1. Understand aspects of the business of design.			
2. Gauge what makes a design profitable. Understand strategies of production and scaling.			
3. Recognize types of intellectual property and its application and importance in design.			

Course Code:	SDS 401	Course Title:	Design for Social Change
Course Outcomes			
The student at the completion of the course will be able to:			
1. Develop an understanding of methods used in community based participatory research.			
2. Understand the importance of Participation at each step of the design process.			
3. Understanding Of Toolkit Of PRA and Participatory Design			

Course Code:	SDG 402	Course Title:	Copy-Writing
Course Outcomes			

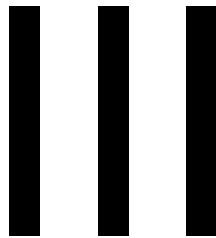
The student at the completion of the course will be able to:

1. Understand the importance of copy in executing good design communication
2. Support design work with the use of effective copy

Course Code:	SDG 402	Course Title:	Technical Studies: Electricals & Electronics
Course Outcomes			
The student at the completion of the course will be able to:			
<ol style="list-style-type: none"> 1. To Make Students Understand Critical Non-Ideal Effects In Electronic Devices and Systems And How To Address Such Effects 2. Enabling Them To Design And Construct Physical electronic Circuits That Operate As Desired. 			

Course Code:	SDG 404/SDP 404	Course Title:	Design Thesis
Course Outcomes			
The student at the completion of the course will be able to:			
<ul style="list-style-type: none"> • Plan and execute a design project that deals with systems • Plan and design modular solutions that can be customized 			

Course Code:	SDS 404	Course Title:	Colloquium
Course Outcomes			
The student at the completion of the course will be able to:			
<ul style="list-style-type: none"> • Present their Project in a professional manner as is expected in the industry • Should be able to communicate the salient points of their design process 			



DETAILED COURSE DESCRIPTIONS

SCHOOL OF DESIGN
Bachelor of Design

FOUNDATION PROGRAMME : SEMESTER 1

SDF-11 3	Representation in Design I: Sketching, Analytical Drawing & Geometry
SDF-10 4	Introduction to Materials & Workshop Skills
SDF-10 3	Form Studies I: Colour & Composition
SDF-11 4	Creative Thinking
SDS-10 1	SS/Man, Society & Design
EES-111	Introduction to Environmental Studies

SDF-113: Representation in Design I: Sketching, Analytical Drawing & Geometry

Analytical & Geometric Drawing

Analytical Drawing seeks to sensitize students to accurate depictions of 2D and 3D forms using freehand construction techniques while encouraging them to look at forms in a critical, deconstructive manner. The course will start with drawing various kinds of straight lines, including those that connect random points. Further assignments involve the analysis of forms and objects into basic construction principles in one's mind and then using that to create an accurate representation on paper. Principles of constructing ellipses freehand will be used to make basic curvilinear shapes and build upon that to form cylindrical and spherical volumes. Use of isometric grids and architectonic explorations will help students strengthen their analytical drawing skills further.

The Geometry portion of this module will seek to cover the principles of geometry in natural as well as man-made objects. The students will be taught the use of basic geometric instruments and the principles of geometric construction. This includes use of set squares and T Squares to aid geometric

drawing. Construction will include lines, angles, polygons, derivations, curvilinear shapes etc. Students will also be introduced to the concept of the Fibonacci series, the golden ratio, divine proportions etc and their practical application in the world around us. Students will undertake a formal study of tessellations derived on their understanding of geometry and repetition. The students will also closely study geometry in nature through detailed analysis of geometry and morphology in natural forms which may include flowers, inflorescences, leaves etc. The aim is to encourage students to observe and evolve geometric patterns and both micro and macro levels, to study relationships between the elements of space and form.

SUGGESTED EXERCISES:

Analytical Drawing

1. Exploring straight lines with variations in weight.
2. Connecting points in space.
3. Making cubes, ellipses, cylinders & spheres freehand, using analytical methods.
4. Making revolved forms based on a defined side profile (bottles, vessels).
5. Representing thickness and flanges; Adding details like handles, spouts.
6. Isometric grids and architectonic forms.
7. Proportional transformation of form based on grids.
8. Analyzing complex forms into basic geometry and then 'constructing' them freehand.
9. Additive and subtractive forms in drawing analytically.

Geometric Drawing

1. Categorizing all known and related terms into a structural tree of geometry
2. Drawing precise straight lines with varying weight
3. Parallel lines using set-squares.
4. Parallel curved lines, tangential curves, developing patterns using compass.
5. Bi-section of a line with compass, Bisection of angles with compass, Proportionate division of lines with parallel lines.
6. Perpendicular to a straight line, Parallel lines at specified distances, tangent to a circle.
7. Progressive Circles touching each other within angles.

8. Triangle, Square Pentagon, Hexagon and Octagon with set square and T-square with protractor for exterior angle division.
9. Triangle, Square Pentagon, hexagon using compass to generate exterior angles (semicircle method).
10. Polygons with a common base (Islamic method) by finding the center of circumscribing circle. Triangle to Dodecagon on common base.
11. Inscribing Triangle, Square, Pentagon, Hexagon, Septagon, Octagon, Nonagon, Decagon, Dodecagon, inside a given circle.
12. Special construction for finding edge length of series of polygons inside a given circle (carpenters method)
13. Islamic methods for drawing octagon based on a square. Drawing pentagon using compass and straight edge.
14. Islamic methods for drawing dodecagon based on a hexagon.
15. Repeating hexagons with a compass.
16. Mean proportion rectangle (DIN standards for paper)
17. Golden section rectangle. Progression in size.
18. Pentagon using golden section construction.
19. Ellipse by several methods.
20. Involution of regular polygons and analysis of concentric and overlapping involutes.
21. Spirals: Archimedean and Logarithmic. spirals in nature.
22. Tessellations: Regular and Semi-regular, Duals and other transformations.
23. Morphological transformations of tessellations and the work of M C Escher.
24. Morphology in Nature

Assessment Criteria

1. Understanding of Concepts
2. Neatness in Execution
3. Quality of Exploration
4. Application of Concepts
5. Sensitivity to precision

Reference Books

1. Design Drawing by Francis D. K. Ching and Steven P. Juroszek, Wiley

2. Freehand Drawing For Architects and Interior Designers by Magali Delgado Yanes
3. Perspective and Sketching for Designers by Jessica Newman
4. Geometry of Design: Studies in Proportion and Composition by Kimberly Elam
5. Shell foundations: geometry, analysis, design and construction by N. P. Kurian
6. Geometry of construction by T.B. Nichols and Norman Keep

Design Sketching I

Ability to express one's ideas and concepts is the most basic skill a designer needs. This course seeks to introduce freehand drawing techniques and build upon student skills with a stress on quality, speed and accuracy of sketches. At this stage, stress will be laid on sketching objects from the world around and capturing them accurately in the mind and on paper. Thumbnail sketches and quick studies will be practiced. Stylisation is to be avoided at this stage. The emphasis is on capturing images as they are in reality.

The initial instruction will be on good sketching practices, line quality, line variation, freehand line manipulation, wrist control, tools (pencils, charcoal) etc. This will build towards more complex work that includes nature studies, human studies and basic perspective studies (mainly 1 point, architecture + object). This can be done on campus and in nearby monuments. Knowledge of realistic human proportion will be imparted with quick studies for practice. Sketchbooks will be required to be maintained separately and will be part of the final assessment.

SUGGESTED EXERCISES:

1. Introduction to types of pencils and their characteristics, achieving variation in pressure and shade; Importance of wrist and elbow movements, importance of drawing in single strokes, hand and eye coordination in drawing from life.
2. Drawing high quality freehand lines (drawing from the elbow); Lines, circles, figures of eight.
3. Achieving a grey scale with one or many pencils.
4. Drawing cubes in perspective.
5. Developing patterns and textures.
6. Drawing from nature: details and larger objects.
7. Drawing scenes from life (nature + manmade).
8. Drawing furniture in perspective.
9. Drawing the human form; proportion, stance, portrait and details.

10. Drawing one point perspectives.

Assessment Criteria

1. Overall growth in skills
2. Realistic depiction
3. Line quality & variation
4. Neatness in Execution
5. Concepts of perspective drawing

Reference Books

1. Anatomy and Drawing by Victor Perard
2. Design Drawing by Francis D. K. Ching and Steven P. Juroszek, Wiley
3. How to Draw: drawing and sketching objects and environments from your imagination by Scott Robertson
4. Rendering with Pen and Ink by Robert W. Gill, W Norton & Co Inc
5. Sketching: The Basics by RoselienSteur

SDF-103: Form Studies I (3 Credits)

This module is meant to introduce the elements of design, starting from the very basic dot, transforming to a line, shapes and other two dimensional manifestations like patterns and textures. The emphasis will be on two dimensional (2D) exploration. Form exploration will include geometric and organic forms though the two will be differentiated. Students will be taught to explore and express abstract concepts with the use of basic forms. Creating patterns & textures using basic forms will also be explored. It will be important to build sensitivity to use of elements in terms of shape, number, size, proportion etc. Gestalt Laws will be taught and practically employed to create visual studies in balance and proportion. White space as a design tool will be explored and employed to achieve visual equilibrium. Movement in 2D form is also to be studied through a single representation and through multiple panels.

The module will also embrace the use of colour as a tool in 2D form exploration. Colour theory will be taught to students, first in its theoretical aspects, and then through practical exploration through assignments. Students will be made familiar with various terminologies used in colour theory (value, shade, hue etc), creation of colour variation (additive, subtractive etc), various colour wheels and their derivatives (complimentary, triads etc), colour scales, colour interaction etc. A final assignment using colour as a story telling device is to be assessed.

SUGGESTED EXERCISES:

1. Exploring line, line weight to create a composition; Parallel lines, Diagonal Lines
2. Varying line weight, density, directionality
3. Basic Elements of Design
4. Laws of Gestalt Psychology
5. Using Basic shapes to demonstrate Gestalt Laws
6. Expressing abstract concepts using basic shapes; Using size and scale as a tool
7. Principles of Design including Balance, Focus, Rhythm, Contrast, Scale & Proportion
8. Generating form from shapes
9. Defining negative and positive space and their inter-relations
10. Colour Theory: Primary, Secondary Colours, Colour Wheel, Complementary Colours, Scales, Tones, Shades, Colour Schemes, Colour Interaction
11. Storybook using form and colour principles

Assessment Criteria

1. Understanding of concepts
2. Translation of the abstract onto 2D Form
3. Neatness in Execution
4. Quality of Exploration
5. Self expression & Class participation

Reference Books

1. Design Basics by David A. Lauer and Stephen Pentak
2. Design Elements: Understanding the rules and knowing when to break them by Timothy Samara

3. Universal Principles of Design by William Lidwell, Kritina Holden and Jill Butler, Rockport Publishers
4. Elements of Design: Form & Colour by HK Vyas
5. Color Influencing Form by Roy Osborne
6. Color, Form and Space by Birren
7. Colour Interaction with a Three Dimensional Form by HK Vyas
8. Goethe's Theory of Colours by Johann Wolfgang von Goethe
9. Colour: A Workshop for Artists and Designers by David Hornung

EES-111: Introduction to Environmental Studies (4 Credits)

This is a mandatory course taught to all students at Doon University, as prescribed by MHRD, to build an environmentally conscious and aware body of professionals for the future. It will be elected from the School of Environment & Natural Sciences.

SDF-104: Introduction to Materials & Workshop Skills (3 Credits)

The aim of this module is to initiate students in exploring the use of materials as per their innate properties and functions derived from them. Materials explored will include

1. Thermocol
2. POP
3. Wood
4. Sheet Metal
5. Polysterene& Acrylic

These materials have been selected based on the materials used by students in model-making most commonly. Students will be taught and made to explore the theoretical aspects (typologies, properties, manipulation, weathering etc) of the material before exploring the practical realm. After an exploration of basic nature, students will be encouraged to evolve new form and function studies using materials individually and in combination.

Stress will be laid on understanding & using hand tools as opposed to machines at this stage. However, a visit to local workshops and labs will be arranged to give students an overview of possibilities of material manipulation. Safety first must be emphasized.

The module will be split into sub-modules spread over the semester, starting from the simpler to use materials to those that need more machine application.

SUGGESTED EXERCISES:

1. Basic exploration of material using hand tools, concentrating on material properties and how best to develop them.
2. A final work piece or set of pieces that demonstrate material qualities and some unique functional aspect explored by the student.
3. A written report on materials, categories, additive-subtractive techniques and tools used for each material.

Assessment Criteria

1. Understanding material properties
2. Quality of Work
3. Depth of Exploration
4. Ability to transform material properties into function
5. Sensitivity to tools and their usage

Reference Books

1. Plaster of Paris: Techniques from Scratch Paperback by Reid Harvey
2. Understanding Wood: A Craftsman's Guide to Wood Technology by R. Bruce Hoadley
3. Exquisite Modular Origami by Meenakshi Mukerji
4. Ornamental Origami: Exploring 3D Geometric Designs by Meenakshi Mukerji

SDF-105: Man, Society and Design (2 Credit)

An Introduction to Social Science Theory and Design Anthropology

All design emerges from social functional needs and potentials. Designers need to be fully equipped to present the functionalism of their design through obvious interaction with analytical and critical social knowledge. This allows them to be better equipped to work alongside social needs. This course

aims to inter-connect the academic values of Anthropology, which deals in human, social and cultural values, and its preoccupation with the Design of Life i.e. how do we put a context to all that we see around us. The skills developed in this course can lead to better social value - adjustment of future designers by sensitivity towards the affinity between the Theory of Social Sciences and Design.

Design and all fields of human knowledge have developed simultaneously and through this course, we trace the patterns visible amongst the milestones in human knowledge evolution and design development. Since the evolution of Mankind, human culture and knowledge is constantly expressed and reproduced through design. Design pervades all parts of daily life i.e. from the utensils we eat in to the clothes that we wear or discard as we age. Cultural Norms preset design-preferences and design-ethics. There has been the birth of multidisciplinary research which integrates emergence of design with evolution of culture so as to express the functionalism inherent in design as being an innate component of Culture. By tracing the evolution of Human Civilization, its Symbols, Languages and Mores, the aim of this module is to build upon the inter-connectedness of Design with all fields of human knowledge.

SUGGESTED EXERCISES:

1. Class Group Discussions
2. Expressive collages
3. Essay Hand-in

Assessment Criteria

1. Understanding of concepts
2. Ability to relate subject to Design
3. Class Participation
4. Expression & Communication Skills
5. Depth of ideas

Reference Books

1. Design Anthropology: Theory And Practice by Wendy Gunn, Ton Otto & Rachel Charlotte Smith

2. Renewing Our Practice: Preparing The Next Generation Of Practitioners by Susan Squires and Alexandra Mack
3. Social Anthropology by Edmund Ronald Leach
4. Doing Research In Design by Christopher Crouch and Jane Pearce
5. Anthropology: A Brief Introduction by Carol Ember and Melvin Ember
6. Small Places, Large Issues: An Introduction to Social and Cultural Anthropology by Thomas Hyll and Eriksen

FOUNDATION PROGRAMME : SEMESTER 2

SEMESTER 2				
SDF-115	Representation in Design II: Sketching, Photography & Computer Graphics	6	CORE	STUDIO
SDF-108	Form Studies II: 3D Geometry & Form in Space	4	CORE	STUDIO
SDF-106	Design Concerns	4	CORE	STUDIO
SDF-116	History of Design	2	CORE	THEORY
SDS-102	SS/Art Appreciation	2	GE	THEORY
ENG-151	Communication in English	2	AECC	THEORY
	TOTAL	20		

SDF-106: Design Concerns (4 Credits)

A broad overview of design & creative approaches to problem solving meant to initiate students with little or no design background into design thinking. Course will consist of lectures, group exercises and individual assignments meant to encourage design thinking and design solutions to various issues. The aim will be to try and break the hold of conventional educational models and structures and encourage a more left-brain oriented approach to problem solving.

This is a study of the rationale behind design which introduces a systematic design process, an overview of the practice of design, the societal impact of design, critical issues and the relationship of design to its socio-cultural environment. The course highlights the relevance of design vis-à-vis other disciplines. It encourages students to explore the social and global responsibilities of design, diversity of approaches, interdisciplinary collaboration, and a wide range of design applications. It helps students study macro issues and zero in on large and small design opportunities.

Assessment Criteria

1. Understanding of concepts
2. Ability to inter-relate concepts
3. Class Participation
4. Expression & Communication Skills
5. Depth of ideas

Reference Books

1. 101 Design Methods: A Structured Approach for Driving Innovation in Your Organization by Vijay Kumar
2. Change by Design by Tim Brown
3. Design Thinking: Process and Methods Manual by Robert Curedale
4. Solving Problems with Design Thinking - Ten Stories of What Works by Jeanne Liedtka
5. The Art Of Innovation: Success Through Innovation the IDEO Way by Tom Kelley
6. The Design Way: Intentional Change in an Unpredictable World by Harold G. Nelson & Erik Stolterman
7. The Ten Faces of Innovation by Tom Kelley

SDF-115: Representation in Design II: Sketching, Photography & Computer Graphics

Design Sketching II

The second sketching module will lay emphasis on addition and creation of detail while drawing. Detailing a basic form to create parts within the whole will be a focus in this module, including how to maintain proportions in different views while still accurately depicting volumes.

Students will be encouraged to sketch the entire spectrum of objects and figures in this course. They will be required to generate more complex perspective views including 2 and 3 point ones in

freehand drawing. The use of coloured medium will be introduced in this module as opposed to Design Sketching I.

Representation techniques will also be introduced in this module for general application. This will teach students how to convey their ideas and concepts in a more easily understandable way with a higher reflection of the finished state. Techniques will include both realistic as well as stylized depictions.

Assessment Criteria

1. Overall growth in skills
2. Realistic depiction
3. Line quality & variation
4. Neatness in Execution
5. Exploration in techniques

Reference Books

1. Anatomy and Drawing by Victor Perard
2. Design Drawing by Francis D. K. Ching and Steven P. Juroszek, Wiley
3. How to Draw: drawing and sketching objects and environments from your imagination by Scott Robertson
4. Rendering with Pen and Ink by Robert W. Gill, W Norton & Co Inc
5. Sketching: The Basics by RoselienSteur

Introduction to Computer Graphics

This module is meant to be a brief orientation of students in both vector and raster graphic software. The aim is to familiarize the students with software layouts, commands and capabilities rather than to help them master the software. After this brief introduction students will be encouraged to explore the software on their own while documenting courses and in relevant assignments in other courses. The 2 software earmarked are Adobe Photoshop & Adobe Illustrator. Corel Draw may be substituted for Illustrator if necessary.

Assignments should encourage the students to explore tools of the software rather than produce a definitive product. Both strengths and limitations of software must be discussed and debated upon in class.

Assessment Criteria

1. Understanding of tools
2. Exploration of tools
3. Translation of ideas through tools
4. Systematic approach to usage
5. Class Participation

Reference Books

1. Adobe Illustrator CC Classroom in a Book by Brian Wood
2. Adobe Photoshop CC Classroom in a Book by Andrew Faulkner and Brie Gyncild
3. CorelDRAW X7: The Official Guide 11th Edition by Gary David Bouton
4. The Adobe Photoshop CC Book for Digital Photographers by Scott Kelby

Introduction to Photography

This module involves exploration of the photographic medium through the digital single lens reflex camera. Exploring colour, composition, subject and movement through a viewfinder while also leaning the theoretical aspects of focal length, shutter speed, aperture, lenses, depth of field, etc. The students will also be encouraged to briefly explore photo processing software like Adobe Photoshop for enhancing and manipulating photographs. Course seeks to be more than a technical orientation or a hobby workshop, but a deeper exploration of the craft and the politics of its use.

Students must be made to study the theory and technique behind photography. A study of celebrated photographers and their work must also be made. The evolution of the photographic image over time and its role in society needs to be pondered and debated for a deeper, critical understanding.

Students will be taught both field photography as well as studio photography to help them in other courses and future projects.

Assessment Criteria

1. Understanding the medium
2. Technical understanding
3. Quality and depth of photography
4. Creative Expression
5. Class Participation

Reference Books

1. A History of Photography by Jean-Claude Lemagny and Andre Rouille
2. Photography: A Cultural History by Mary Warner Marien
3. Photography: The Definitive Visual History by Tom Ang
4. The Digital Photography Book by Scott Kelby

SDF108: Form Studies II(4 Credits)

In the second part of form studies, students will be taken from 2D into 3D, that is, moving from flat sheets into space. Students will be introduced to the concept of geometric and organic volumes, how to generate them and further, how to evolve them into new and original 3D forms. Solids will be broken into surfaces, edges and apexes to understand inter relations. Properties of basic solids like cube, cone, pyramid, cylinder and prism will be explored first and the students will use the same analytical approach to Platonic and Archimedean solids. The concept of 'duals' and truncations will be introduced and analysed with 3D paper models. The use of colour on solid forms, including variation of light and shadow will be explored. Similarly, exploration of texture on solids will be briefly touched upon. Material exploration in 3D will be a part of this course as well.

Assessment Criteria

1. Understanding of concepts
2. Translation of the abstract onto 2D & 3D Form
3. Neatness in Execution
4. Quality of Exploration
5. Class Participation

Reference Books

1. Design Basics by David A. Lauer and Stephen Pentak
2. Design Elements: Understanding the rules and knowing when to break them by Timothy Samara
3. Universal Principles of Design by William Lidwell, Kritina Holden and Jill Butler, Rockport Publishers
4. Elements of Design: Form & Colour by HK Vyas
5. Color Influencing Form by Roy Osborne
6. Color, Form and Space by Birren

SLE111: Communication in English (2 Credits)

This is a supplementary course that seeks to teach communication in English for professional and creative purposes to students, especially those coming in from a different medium of study. It will be elected from the School of Languages.

SDF116: History of Design (2 Credits)

The history of design is more than a chronology from the Arts & Crafts movement to postmodern design. It needs to be studied through artifact analysis, of services, interactions, policies, institutions and legal and technical systems as well as physical objects and spaces – alongside more conventional historical methods to generate new perspectives on large historical questions. A complete history of design includes fashion and textile history, architecture, science and technology, the material culture of politics and the everyday, making/craft, practice-based history and global history through material culture. It includes aspects of the focus is on the acts of production and consumption. Some of the eras of Design History are exclusive but most are derivative of other social and artistic movements that were ongoing at the time. In countries like India, Design has been an offshoot of the indigenous culture and cultural traditions so design history simply refers to a cultural history of artefacts and crafts. After this module, students should be able to identify and differentiate different design eras with their artefacts and iconic figures. They should be aware of the design tradition in India and its

uniqueness. It is important to be able to vocalize their understanding, thoughts, opinions and analyses of various topics related to the history of design.

Assessment Criteria

1. Attendance & Class Participation
2. Ability to correlate concepts
3. Inquiry and analysis
4. Depth of Research Reference

Books

1. The India Report by Charles & Ray Eames
2. M. J. de Vries et al (eds.), Design Methodology and Relationships with Science
3. History of design decorative arts and materials culture, 1400-2000 / Kirkham, Pat. : Kirkham Weber, 2013
4. Meggs History of Graphic Design / Meggs, Philip B

SDS-102 Art Appreciation (2 Credits)

Art is a unique feature of human experience. It can be a powerful catalyst for building skills and understanding a range of subjects. Art is meant to stimulate thought since it allows a viewer to draw out unique emotions and form personal experiences. Appreciation entails valuing, positive or negative; it is dependent on acquired perception that requires initiation and practice, training one's sensibilities, and learning how to apply apt vocabulary to distinguish aspects of what is being appreciated. Art Appreciation allows one to construct meaning and articulate thoughts about feelings and perceptions. It helps one to develop an open mind and recognize that there are multiple approaches to everything including problem solving which forms the basis of concept of design.

This course attempts to map philosophical terrains of 'art appreciation', exemplify acts of appreciation in the visual arts, and briefly explore the history of teaching for art appreciation. We shall learn art -appreciation activity by applying various methods like literal description, comprehensive feeling, interpretation, value judgement or formal analysis.

Assessment Criteria

1. Attendance & Class Participation
2. Ability to correlate concepts
3. Inquiry and analysis

4. Depth of Research Reference

REFERENCE BOOKS:

1. Six lessons of art appreciation ; Christopher Alan Byrne
2. Art appreciation basics; Carol Kay
3. Methods and theories of art history - Anne D ' Alleva

PRODUCT DESIGN : SEMESTER 3

SDP-201	Form Derivation I
SDP-202	Material Studies I: Traditional Materials
SDP-203	Product Visualisation& Orthography
SDP-204	Ergonomics II
SDP-205	Design Project I: Simple Product Design & Model Making
SDS-201	SS/Film Appreciation

SDP-201: Form Derivation I (4 Credits)

This is the introduction and exploration of 2 dimensional and 3 dimensional form in product design. The aim of the course is to develop a sense of form and aesthetics while dealing with tangible 2D & 3D shapes. Radii manipulation in 2D and 3D form, exploration of surface textures in different materials, 2D and 3D Form transition, exploration of form to develop imagination and insight, use of metaphors to generate new forms, concept of family of forms etc are topics to be covered with a basic theoretical introduction and a further exploration in sketches and models. Assignments should be given in generation of new forms, integration of multiple isolated forms and transition of forms from one to the other. Model making is an essential part of the course. It should be instilled in the students as a method of exploration and also refinement of designs.

Assessment Criteria:

1. Understanding of Concepts
2. Application of Concepts
3. Exploration & Sketching
4. Quality of models

Reference Books:

1. Gail Greet Hannah, Elements of Design, Princeton Architectural Press
2. Elam, Kimberly; Geometry of Design: Studies in Proportion and Composition, Princeton Architectural Press
3. Hall, Edward Twitchell; The Hidden Dimension, Publisher: Anchor
4. Bachelard, Gaston; Jolas, Maria (Translator); The Poetics of Space, Publisher: BeaconPress; Reprint edition, 1994

SDP-202: Materials Studies I (2 Credits)

This is the first module in the series which focuses on traditional materials like wood, metal and glass. The aim is to initiate a product designer's attitude to materials and processes in the students' mind. Why use glass for a certain application? Where would a composite work better than wood? Why certain metals make better sheets and others make better rods? The method of learning should involve field visits, conducted tours and self initiated discovery excursions. If time permits, some machined models should be prepared to demonstrate applied learning from the course. There could be group work in replicating relevant products in said materials accurately.

Topics to be Covered

Wood:

- i. Forms available, including composites
- ii. Pre Machining Treatments
- iii. Joineries & Applications
- iv. Machining processes
- v. Finishing processes & Coating

Metal:

- i. Forms available and methods of manufacturing those forms (sheets, pipes, wire, sections etc)
- ii. Machining processes (cutting, casting, forming, joining etc)
- iii. CNC Machining
- iv. Finishing processes & Coating (Galvanizing, plating, anodizing, buffing, scratching etc)
- v. Fasteners and their specification

Glass:

- i. Forms available and methods of manufacturing those forms (blown, float, pressed etc)
- ii. Forming
- iii. Engraving & Etching
- iv. Finishing processes & Coating

Assessment Criteria:

- 1. Understanding material & machining principles
- 2. Research & Field Work
- 3. Ability to transform material properties into function
- 4. Quality of model

Reference Books:

- 1. Understanding Wood: A Craftsman's Guide to Wood Technology by R. Bruce Hoadley

2. Wood: Identification and Use, by Terry Potter
3. Nature & Art of Workmanship by David Pye
4. Creative Metal Forming by Betty Helen Longhi & Cynthia Eid
5. The Backyard Blacksmith Hardcover by Lorelei Sims

SDP-203: Product Visualisation & Orthography (2 Credits)

It is essential for designers to be able to communicate their designs to the prototyping and manufacturing teams. This course is meant to equip product design students with the tools to communicate their designs accurately, following industrial standards. Learning how to read and make drawings is included. Students will be familiarized with interpreting different types of views, lines, hatching and other specifications. They will be taught drafting as per industrial standards, including standard nomenclature, principles of scale, orthographic projections, standard views, imagined views, missing lines, dimensioning, projection systems, assemblies etc. At the end of the course, they should be able to draw accurate technical drawings for simple products by themselves.

The course is to be essentially done manually but if time permits there may be an introduction to CAD drawing techniques.

Suggested Assignments

1. Analysis of existing products
2. Drawing orthographic views based on 3D sketches and vice versa
3. Selecting an object that is an assembly of 5-7 parts and doing detailed technical drawings for it, including orthographic views, sections and assemblies.

Assessment Criteria

1. Understanding of Concepts
2. Neatness in Execution
3. Sensitivity to precision
4. Application of Concepts

Reference Books :

1. Engineering Drawing, by P.S. Gill, S. K. Kataria & Sons
2. Elementary Engineering Drawing [Plane and Solid Geometry], by N.D. Bhatt, Charotar Publishing House

SDP-204: Ergonomics I (2 Credits)

Ergonomics is one of the indispensable tools in a product designer's tool kit and a theoretical understanding is crucial before its practical use. The first module of Ergonomics for Product Design covers the physical aspects of ergonomics. The course should cover the Definition and History of Ergonomics and an Introduction to Systems Design and Task Analysis. Students should be introduced to the science of Anthropometry and the use of Anthropometric Data in Ergonomics in the global and Indian context. Universal principles of design should be discussed with relevant case studies from different disciplines of design.

Ergonomics as shaped by physiology of body movement and Muscle Use should be studied, along with biomechanical models in Ergonomics and muscular work including dynamic and static work. The module also covers spatial ergonomics and workspace design, specifically, the role of ergonomics in work and in improving work efficiency. A brief exploratory final assignment should be given that helps students consolidate their learning into relevant research and some conceptual models.

SUGGESTED ASSIGNMENTS:

1. Task Analysis for some common implements
2. Design and evaluation of a musculoskeletal and work history questionnaire
3. Grip analysis of some commonly used tools and implements

Assessment Criteria:

1. Understanding of Theoretical Principles
2. Research & Field Work
3. Ability to transform theory into practical application
4. Concepts & Exploration

Reference Books:

1. The Measure of Man and Woman: Human Factors in Design by Alvin R. Tilley, Henry Dreyfuss Associates
2. Indian Anthropometric Dimensions by Debkumar Chakrabarti
3. Introduction to Ergonomics by R.S. Bridger

SDP-205: Design Project (8 Credits)

Simple Product Design: This project is meant to initiate students into the Product Design process. In designing a simple product, it is crucial to address form and function foremost as technical detail is low. Students should be encouraged to come up with novel yet practical ideas for real life design problems and then refine them into a well designed and resolved product.

All the theoretical inputs of this semester, including form derivation, ergonomics and material studies will come together to form a holistically designed product that meets user needs. This is a coming together of all the courses in the semester and the application of each specific learning should be emphasised.

The design process should be rigorously followed for projects in order to develop a methodology for the students that comes naturally to them. A central theme or topic may be chosen to help narrow the selection process and then relevant market and field research should be executed, compiled and presented along with analysis.

Prototyping is very important for this module to build the validation culture in product design students. Quick exploration models as well as a proper, full-scale final prototype must be made as part of the course. Technical drawings should be developed and submitted as well to maintain touch with the manufacturing aspect of product design.

Assessment Criteria:

1. Design Process
2. Periodic Evaluation
3. Concept Exploration
4. Design & Prototype

Reference Books:

1. Design Research: Methods and Perspectives by Brenda Laurel and Peter Lunenfeld.
2. Research Design: Qualitative, Quantitative and Mixed Methods Approaches by CRESWELL.
3. 101 Design Methods: A Structured Approach for Driving Innovation in Your Organization by Vijay Kumar.

SDS-201: Film Appreciation (2 Credits)

This course is meant to explore questions like, “How is meaning created in film? How do content, form and contexts come together? How are films received? What are the cultural, ideological and theoretical perspectives?”

This course will also juxtapose Indian cinema with global cinema, comparing and contrasting Western and Eastern art forms. We will go over notable periods in film history, watching relevant movies. Themes include Italian Neo realism, French New wave, Indian Regional, New Hollywood, Japanese Cinema, Bollywood/Tollywood etc. We will also discuss feminist, economic, historical, psychological, and sociopolitical approaches to film and how they hold relevance in a developing society like India. We will study the various aspects of film including the story line, editing, sound, cinematography, music, editing (montage), composition (mise en scene) and camera movement, screenwriting,

directing, and performance. The course will be conducted through movie screenings, detailed film analyses, class presentations by students, class discussions and written essays.

ASSESSMENT CRITERIA

1. Understanding of concepts
2. Ability to relate subject to Design
3. Class Participation
4. Expression & Communication Skills
5. Depth of ideas

REFERENCE BOOKS

1. The Oxford Guide To Film Studio / Hill,John. : Oxford
2. British Film History Design / Ede,Laurie.N, I.B.Tauris,
3. Signs and Meaning in the Cinema By Peter Wollen, Secker & Warburg, 1969
4. Magic and Myth of the Movies By Parker Tyler, Simon & Schuster, 1970

PRODUCT DESIGN : SEMESTER 4

SDP-206	Form Derivation II
SDP-207	Material Studies II: New Materials
SDP-208	CAD I
SDP-209	Design Project II: Interface Design & Ergonomics
SDS-202	SS/SS/Policy & Politics
SDP-210	Design Exposure Visit
	TOTAL

SDP-206 : Form Derivation II (4 Credits)

This module builds on the previous one in developing a sense of form and aesthetics in Design students. After transitions and integrations, students should work with various other aspects of form in this module like additive form, subtractive form, form in motion and form in relation to nature. The aim is to evolve their sense of form while encouraging them to explore known and new forms around us. After doing abstract exploration, students should also be given a concrete design exercise with a real product, stressing on form in relation to functionality. Model making is an essential part of the course. It should be instilled in the students as a method of exploration and also refinement of designs.

Assessment Criteria:

1. Understanding of Concepts
2. Application of Concepts
3. Exploration & Sketching
4. Quality of models

Reference Books:

1. Gail Greet Hannah, Elements of Design, Princeton Architectural Press
2. Elam, Kimberly; Geometry of Design: Studies in Proportion and Composition, Princeton Architectural Press
3. Hall, Edward Twitchell; The Hidden Dimension, Publisher: Anchor
4. Bachelard, Gaston; Jolas, Maria (Translator); The Poetics of Space, Publisher: Beacon Press; Reprint edition, 1994

SDP-207 : Material Studies II: New Materials (2 Credits)

This module focuses on newer materials used in product design like plastics, silicones, new-generation alloys, smart materials, etc. The aim of the course is to give students a basic, theoretical orientation and then build on it by understanding function and selection. Through field visits, conducted tours and self-initiated discovery excursions, the students will learn about the innate properties of the materials, their advantages and disadvantages over conventional materials.

Processes of manufacture used in these processes should be studied in detail to understand the constraints they place on design as well as the opportunities they create. Case studies and demonstration videos should be used to understand different kinds of molding and forming processes and the tell-tale signs they leave on products. Understanding life cycle of these materials is also an important aspect of this module in order to design for a sustainable future.

Assessment Criteria

1. Understanding of theoretical concepts
2. Understanding of applications
3. Analytical Approach
4. Self Initiative
5. Class Participation

Reference Books

1. Fundamentals of Plastics Mould Design by Sanjay K Nayak, Pratap Chandra Padhi, Y. Hidayathullah (Available Free Online)
2. Green Plastics: An Introduction to the New Science of Biodegradable by Eugene Stevens
3. Plastics: Materials and Processing by A. Brent Strong
4. The Science and Engineering of Materials by Donald R. Askeland and Wendelin J. Wright

SDP-208 : Computer Aided Design (2 Credits)

This module is meant to be a brief orientation of students in 3D software used in designing and drafting in Product Design. The aim is to familiarize the students with software layouts, commands and capabilities rather than to help them master the software. Both strengths and limitations of working in 3D software must be discussed and debated upon in class. There should also be an orientation of the softwares available, how they differ and what their different applications should be.

The software to be worked on in detail can be chosen by the faculty based on various factors like availability, relevance and industry norms. The course should include familiarization with the software, analysis of modeling approaches, assignments on modeling different kinds of surfaces of increasing complexity and the basics of rendering models (including surface finishes and textures). Students should be encouraged to model familiar objects as well as novel designs. Details like filleting should be included in the model. Students should also be introduced to generating technical drawings from 3D software.

Assessment Criteria

1. Understanding of tools
2. Exploration of tools
3. Translation of ideas through tools
4. Systematic approach to usage
5. Class Participation

Reference Books

To be specified as per software selected

SDP-209 : Design Project II: Interface Design & Ergonomics (8 Credits)

The focus of this project is to introduce students to responsive display and control design. An introduction to human factors, including the role of psychology and physiology in interaction design should be explored. Some other topics that should be covered are sensation, perception, cognition, information processing, research methodology etc.

For virtual interfaces product design students should be given an orientation in visual design for interactive systems, including the basics of typography, visual design, information visualization, infographics systems etc.

There should be evidence of a proper design method, including research, systems understanding and documented communication (sketches, surveys, models, prototypes etc). The project should involve soft prototyping techniques including quick models and virtual models.

ASSESSMENT CRITERIA:

1. Design Process

2. Periodic Evaluation
3. Concept Exploration
4. Design & Prototype

Reference Books

1. Ratner, Julie (ed); Human factors and web development; Lawrence Erlbaum Associated (2003)
2. Sanders, Mark S; McCormick, Ernest J; Human factors in engineering and design, McGraw Hill (1993)
3. Zunse, Leonard; Visual perception of form; Academic Press (1990)
4. Journal of Human Computer Interaction
5. Tidwell, Jeniffer; Designing Interfaces, 2nd edition; O'Reilly; 2011
6. Hooper, Steven; Designing Mobile Interfaces; O'Reilly; 2011
7. Tufte, Edward; Visual Display of Quantitative Information; Graphic Press; 1993
8. Ware, Colin; Information Visualization, 3rd edition: Perception for Design (Interactive Technologies); Morgan Kaufmann; 2012

SDS-202 : SS/Policy & Politics (2 Credits)

Art is conditioned and created by the social, political and ecological environment that surrounds any human-creator. It also simultaneously acts as a method of displaying one's opinions i.e. whether supporting or dissenting to established norms. This short course is aimed at introducing the students to basic concepts that form part of an everyday political life of a human. By virtue of being a Citizen, a human has certain Rights and Obligation. Understanding the historical genesis of the State and Government can help a human better place their ideas of right and wrong in a theoretical context while understanding that every human is eventually created by the political and social world around them.

Design as a process for the benefit of end users is influenced by a myriad of factors. We are surrounded and affected by these directly or indirectly in the form of government social & organizational policies. This course is an introduction to how policies affect and influence societies. It talks about the role of policies in shaping economy that in turn fuels the industry of design among all others. We will go through basic macroeconomic indicators like GDP that shape policy-making. We will also look at basic tenets of politics & evaluate features of utilitarianism, classical & neo classical marxism and democracy.

A suggested lecture schedule is as follows:

- I. Understanding Construction of State
- II. Introduction to Politics and Artists as Political Culturists
- III. Governance and Policy: Universal Methods

- IV. Placing the Human as a Political Being
- V. Understanding Art as political Dialogue

Lectures and Visual Narrative supported by movie screenings can be used as the method of instruction along with Case Studies on Art and Political Dissent in the 21st Century.

Assessment Criteria

1. Understanding of concepts
2. Ability to relate subject to Design
3. Class Participation
4. Expression & Communication Skills
5. Depth of ideas

Reference Books

Introduction to Political Theory, 2nd Ed. 2009. John Hoffman. Ch1, 2 and 3

FOR DEEPER STUDY:

1. A History of Political Thought: Plato to Marx by Mukherjee
2. Foundations of Indian Political Thought: An Interpretation - From Manu to the Present Day by V. R. Mehta
3. Western Political Thought by Gauba O P

SDP-210 : Design Exposure Visit (2 Credits)

The Design Exposure Visit module is meant to expose students to field experiences of multiple kinds. There should be visits to manufacturing facilities to help students understand what mass production entails. If possible, visits to smaller manufacturing set ups should also be included to help students mentally compare the two. There should be visits to Design Studios to help students understand how design consulting works. A visit to another design institution will help build curiosity and healthy competition. There should be some field assignments given that help the students dig deeper and take initiative in fact finding and field exploration. Design is a fledgling field yet so a deeper exploration of resources is important, as is awareness of other parallel fields that design works in tandem with, like engineering, printing, production, supply chains etc.

The tour can take place in a nearby city or a further away city but it should involve outstation travel to fully immerse students in the experience, without the usual distractions.

Assessment Criteria:

1. Perception & Sensitivity to Surroundings
2. Observation & Records
3. Ability to relate to Design

PRODUCT DESIGN : SEMESTER 5

SEMESTER 5				
SDP-301	Technical Studies I: Mechanisms & Concepts	4	CORE	STUDIO/THEORY
SDP-302	Advanced Prototyping	4	CORE	STUDIO
SDP-303	Documentation of Informal Economies of Production	2	DSE	DOCUMENTATION
SDP-304	Design Project III: Space Design	8	CORE/PROJECT	CORE/PROJECT
SDS-301	SS/Semantics & Semiology	2	SKE	THEORY
	TOTAL	20		

SDP - 301 : Technical Studies 1: Mechanisms & Concepts (2 Credits)

The course is aimed at understanding basic and advanced mechanisms that a product designer will come across in the field of work. The goal is to study simple and complex machinery by systematic application of engineering fundamental. Basics of mechanics like material behaviour, application of Newtonian principles to simple physical mechanisms, elasticity, stress and strain can be explored. Planar mechanism, spherical and spatial mechanisms with respect to kinematics can be covered. Basics of moment of inertia, shear force and bending moment diagrams, normal stress and strain, shear stress and strain, torsion, stress and strain transformations, bending and shear stresses in beams, column buckling, statically indeterminate axially loaded members, combined loading can be covered. Fundamentals of kinematics of machines and mechanisms as well as the applications of these fundamentals in analysis and design of products needs to be included. Statics, dynamics, hydrostatics and hydraulics can be introduced.

It is not necessary to cover all topics exhaustively but what is essential is to build an attitude towards discovery and analysis of mechanisms and engineering concepts that one may have to deal with in the future.

Assessment Criteria:

1. Depth of Understanding concepts
2. Practical Application
3. Class Participation & group work

Reference

1. Basic Engineering Mechanics and Strength of Materials by Das Madan Mohan; Prentice Hall India Learning Private Limited (2010)
2. Basic Mechanics by Bhattacharyya B, Bera S.C. ; New Age International (P) Limited, Publishers; August 2012 Reprint edition (2009)
3. Five Hundred and Seven Mechanical Movements: Dynamics, Hydraulics, Hydrostatics, Pneumatics, Steam Engines, Mill and Other Gearing by Henry T Brown; Merchant Books; 18th ed. edition (5 May 2006)
4. Engineering Mechanics Statics and Dynamics by SHAMES/ RAO; Pearson Education India; 4 edition (2005)

SDP - 302 : Advanced Prototyping (4 Credits)

Product design is an iterative process. Models are a critical part of that process. It is imperative that a single tangible representation of the product that has to be mass produced is made so that one can touch, feel, test and evaluate the way the final product will actually look, work and interact with its environment. The goal of this course is to study, understand and explore techniques of this tangible representation, also known as prototyping. Modeling concepts, types of prototypes, prototyping cycles will be covered. The students need to be introduced to soft prototypes, 3D quick models, paper and quick mock up models, principle models etc. Interactive prototyping methods and introduction to rapid prototyping should also be explored. Students should gain the skills to evaluate a design and decide how best it can be simulated in real life using available materials and resources.

Suggested Assignments

1. Reproducing an existing product with unmistakable likeness
2. Prototyping a new concept where materials and finishes are already specified
3. Creating variations of a design or concept with different finishes and/or materials

Assessment Criteria:

1. Depth of Understanding concepts
2. Practical Application
3. Class Participation & group work

Reference:

1. Prototype to Product; Alan Cohen
2. Models & Prototypes ; T Kojima
3. Modelmaking – A Basic Guide (Norton Professional Books for Architects & Designers); Marth Sutherland

SDP-303 : Documentation of Informal Economies of Production (2 Credits)

This project will be a documentation of Informal Economies of Production with faculty guidance kept to the bare minimum. The process, once initiated, will be taken further by the students through self initiative and site visits over the vacations. It will help students understand why and how informal economies of production exist. The study should include cultural, social, economic and material aspects of the selected informal production selected by the student. Students will also learn about structuring their research and putting it across in a coherent manner. The documentation should answer the 5 W's: WHAT is it exactly? What are the materials and processes involved? If it is a traditional product, then what is the historical/cultural significance thereof? If it is contemporary, then what led to its creation? WHO runs the production? What skills are required? How do they finance it? WHO consumes (buys/uses) it? WHERE is it produced? Geographical, cultural, material significance thereof WHY is it produced? What is the market? Why has it not moved to the formal economy so far? What is the present situation? What will happen in the future? HOW is it done? What are the challenges? And opportunities? The documentation should end in a cohesive, structured document.

Assessment Criteria

1. Depth of Research
2. Understanding
3. Coherence of presentation

Reference Books

1. The Informal Economy: Studies in Advanced and Less Developed Countries
2. The Artistry of Handwork by Jaya Jaitly
3. Visvakarmā's children by Jaya Jaitly
4. Handmade in India by Aditi Ranjan and M.P. Ranjan

SDP - 304 : Design Project III: Space Design (8 Credits)

The aim of this project is to develop spatial design, planning and visualisation skills in students. The Graphic Design students will work more deeply on the display and representation aspects of the selected space while Product Design students will work on more structural and object related aspects. Ideally, students of both disciplines should work in tandem so that they complement each other's existing knowledge and skills and build new spatial design skills together.

Designing for spaces helps us to understand the functions of different spaces and the behaviors that are appropriate within them. Sometimes the functionality is inherent in the form, at other times, the functionality is a result of learned understanding of the meaning of the form.

This course aims at delegating the key knowledge and skills for effective space planning of a given unit. The essentials of effective space planning including the evolution of a space, determining user needs, planning strategies and layouts including complete physical and visual space, how to make the space flexible and managing change in space needs to be explored.

The project can aim at selecting an unfinished space in and around the university and giving possible solutions, layouts and visuals of how the finished space would look like, define what purpose the space would serve and how to go about making the space finished. Another option could be design of an exhibition or retail space of temporary or permanent nature. Deliverables should include drawings, spec sheets, models, moodboards, renderings, photographs etc as relevant. Documentation of the entire design process will be essential to the submission.

Assessment Criteria:

1. Design Process
2. Periodic Evaluation
3. Concept Exploration
4. Design & Prototype

References

1. Towards a New Architecture ; Le Corbusier
2. Elements of Spacemaking ; Yatin Pandya
3. SketchUp for Interior Design: 3D Visualizing, Designing, and Space Planning; Lydia Cline
4. Operative Design: A Catalogue of Spatial Verbs; Anthony Di Mari, Nora Yoo
5. Space Planning Basics; Mark Karlen

SDS-301 : Semantics & Semiology (2 Credits)

This course offers an introduction to the basic concepts and methods in the analysis of natural language meaning in the context of product & graphic design. The course needs to be concerned with human interfaces, i.e. with that layer of cognition in which we experience how we interact with our environment which renders things understandable , meaningful , transparent , alive and useable or that layer of cognition which centers us in our own experiential world. It seeks to understand users' understanding of their practices of interfacing with designed things and provide strategies for designers that can either afford or supportively intervene in that understanding.

Students to be introduced to the formal study of the cognitive system that computes the meanings of complex linguistic expressions. Basics of semantics, semantics in structuralism vs. in cognitive/generative approaches and semiotic foundations along with levels of meanings lexical, sentence, utterance; the principle of compositionality; semantics and pragmatics can be studied. Categorization, mentalism, context, inference and speech act, event semantics can be looked at. The objective to relate to design should follow the logic of product forms, how people perceive them and derive meanings can be explored. The focus needs to be on analysis of people's perceptions and how they understand the crowded market place full of similar products. Perceptual maps that reveals how people have understood the competing products and map them internally in their mind can be explored.

Its is important for designers to be able to look at word and image beyond the surface level and delve deeper in order to come up with more meaningful design that serves the actual needs.

Assessment Criteria

1. Understanding of Concepts
2. Ability to relate subject to Design
3. Class Participation
4. Expression & Communication Skills
5. Depth of Ideas

References

1. An Introduction to Linguistics: Language, Grammar and Semantics; Syal; Prentice Hall India Learning Private Limited; 2 edition (2007)
2. Introducing Semiotics: A Graphic Guide; Paul Cobley (Author), Litza Jansz (Illustrator); Icon (2 September 2010)
3. The Anatomy of Language: Saying What We Mean (Routledge Library Editions: Semantics and Semiology); Marjorie Boulton; Routledge; 1 edition (25 November 2016)

4. The Visual Language of Comics: Introduction to the Structure and Cognition of Sequential Images. (Bloomsbury Advances in Semiotics); Neil Cohn; Bloomsbury Academic; 1 edition (5 December 2013)
5. Visible Signs: An Introduction to Semiotics in the Visual Arts; David Crow; Bloomsbury Visual Arts; 1 edition (6 July 2017)

PRODUCT DESIGN : SEMESTER 6

SDP-305	Value Engineering & Analysis	6	DSE	STUDIO/THEORY
SDS-303	Portfolio Building	2	CORE	STUDIO
SDP-306	Industrial Visit	2	SKE	VISIT
SDP-307	Design Project IV: Technically Complex Project	8	CORE/PROJECT	STUDIO
SDS-302	SS/Media & Hegemonies	2	GE	THEORY
	TOTAL	20		

SDP-305: Value Engineering & Analysis (6 Credits)

Value engineering as a multi-step process is an integral part the design stage of a new development and aimed at increasing value. The course aims to introduce students to Value Engineering in context of Product Design. The history, its users and benefits, why it is done and the methodology need to be included. Assignments can include case studies and exploration of function analysis in case of small products. FAST diagrams and value indices can be looked upon. Studying implementation and quality management should also form a part of the course.

The course should consist of initial case studies to get the students initiated into the value engineering and analysis process. Eventually students should select one specific product and use the principles of value engineering and analysis as applicable to Product Design to aid them in the process of redesigning the product. Emphasis should be laid on the fact that product designers are a part of cross-functional teams in the field and they should be able to appreciate and assess needs and concerns of other functions as well.

The outcome of the course should be a value engineered product design.

ASSESSMENT CRITERIA:

1. Theoretical Understanding
2. Periodic Evaluation
3. Concept Exploration

Reference Books:

1. Product Design And Value Engineering by Dr.H.R.Thakkar Dr.M.A.Bulsara; Charotar Publishing House Pvt. Ltd
2. Value Engineering by Zimmerman L.; CBS

SDS-303 : Portfolio Building (4 Credits)

The design portfolio is one of the most important things in a designer's arsenal. It's an easy way to showcase a designer's strengths and let clients know what type of work interests them most. Portfolio Building would be introducing the students on how to present their work effectively and efficiently to prospective employers and clients. The students need to learn to organize their work, brand themselves, support and explain their work, using social channels to build out and optimizing their portfolio in terms of usability and flexibility in terms of its viewers.

The course should impart skills on designing the content, the navigation, as well the look of the digital portfolio. The module should be structured more like a workshop than a course with regular reviews to assess student progress.

ASSESSMENT CRITERIA:

1. Attendance & Class Participation
2. Concept Exploration
3. Design & Prototype

Reference Books:

1. My Graphic DNA; Portfolio Design & Self- Promotion; Design De Portfolios & Autopromotion; Didenno De Portfolios Y Autopromocion; by Wang Shaoqiang; Promopress
2. Drawing for Product Designers (Portfolio Skills: Product Design) by Kevin Henry; Laurence King Publishing

SDP-306 : Industrial Visit (2 Credits)

The Industrial Visit module is meant to expose product design students to manufacturing and processing of multiple kinds. There should be visits to manufacturing facilities to help students understand what mass production entails. If possible, visits to smaller manufacturing set ups should also be included to help students mentally compare the two. Students need to be exposed to both organized and unorganized forms of manufacture and the potential and limitations of both. Design as a process takes place at the very beginning of the product development lifecycle but if designers are not made aware of the later steps in the development and manufacturing processes then the designs will often be found lacking or inefficient.

There should be some preparatory assignments or case studies given that help the students dig deeper and take initiative in fact finding and field exploration. Design is a fledgling field yet, so a deeper exploration of resources is important, as is awareness of other parallel fields that design works in tandem with, like engineering, printing, production, supply chains etc.

Assessment Criteria:

1. Preparatory Assignments
2. Observation & Records during Visit
3. Ability to understand process
4. Ability to assimilate learnings coherently

Reference Books:

1. Manufacturing Process for Engineering Materials by Kalpak Jain
2. Engineering Design by Linda C. Schmidt & George Dieter
3. A Textbook of Workshop Technology: Manufacturing Processes by N Khurmi & R.S Khurmi
4. Engineering Design Methods: Strategies for Product Design by Nigel Cross

SDP-307 : Design Project IV: Technically Complex Project (8 Credits)

This project aims at understanding a technically complex product with a thorough study of their form and function. The project enables an individual designer to identify an opportunity to create or re-design any product covering the minute details. Through user-centered design research, the product designed needs to be holistic in terms of understanding the systems and subsystems of the product to come up with a viable and optimized design. Selecting a product with mechanical and electronic complexity is essential to properly follow the full length of the design process taking into consideration the design, engineering as well as manufacturing aspect of products.

ASSESSMENT CRITERIA:

1. Design Process
2. Periodic Evaluation
3. Concept Exploration
4. Design & Prototype

Reference Books:

1. Product Design and Development by Karl Ulrich & Steven Eppinger
2. Product and Process Design Principles: Synthesis, Analysis and Evaluation, 3ed, ISV: Synthesis, Analysis and Evaluation by Seider, Seader, Lewin, Widagdo
3. Product Engineering: Eco-Design, Technologies and Green Energy by Doru Talaba, Thomas Roche

SDS-302 : SS/Media & Hegemonies (2 Credits)

Communication and media permeate our society. This course combines visual, aural, technological, computer, theatrical, temporal, and architectural forms of media, communication and its culture. We set to examine culture creating industries as the internet, radio, television, movies, newspapers, advertising, and public relations to understand how media has the power to create and change narratives. The media touch our lives in intimate ways, in our tastes, pleasures, and dreams; they also wield significant political, economic, and social power. The aim of this course is to analyze how media can affect and influence our daily lives by its permeation into our existing systems and can play a vital role in creating and building consensus. Basic knowledge of the communication system, the uses of media, and means of objectively evaluating media performance in light of media problems, promises and potential can be explored. Gramsci's theory of Media Hegemony can be discussed in context of how it would fit in the context of design. Chomsky's work on sociopolitical analysis; political, social, and economic history; and critical assessment of current political circumstance also to be discussed.

Assessment Criteria

1. Understanding of concepts
2. Ability to relate subject to Design
3. Class Participation
4. Expression & Communication Skills
5. Depth of ideas

Reference Books:

1. India Connected: Mapping the Impact of New Media by Sunetra Sen Narayan, Shalini Narayanan; Sage Publications India Private Limited
2. Media Control: The Spectacular Achievements of Propaganda by Noam Chomsky; Seven Stories Press

PRODUCT DESIGN : SEMESTER 7

SDP-401	Internship (Summer Vacation)	4
SDS-402	Design Management & Entrepreneurship	4
SDP-402	Technical Studies II: Electricals & Electronics	2
SDP-403	Design Project V: Social Design	8
SDS-403	Preparation for Thesis	2
SDS-401	SS/Design for Social Change	2
	TOTAL	2 2

SDS-402 : Design Management & Entrepreneurship (4 Credits)

Design is inextricably linked to the way in which society, environment & business interact. The outcome of a design project is seen in products, services and processes. The course would explore the process involved in management of these projects and also design as an activity of user-centered, problem-solving process. It would also explore managing all aspects of design at two different levels – corporate & project. There will be an in-depth analysis of design at various layers of a corporate (1. Level of operations, tangible & touch, 2. At the level of tactics, systems & processes 3. At the level of strategy, policy & mission). Along with this the course also focuses on branding and identity. Understanding how branding and brand identity are strategic points of view and not merely advertising activities will form an important part of the course. Exercises that explore designing brand identities that reflect the values of the organization can be explored. Branding as a culture of the product and borrowing from the disciplines of anthropology, history, and sociology to understand products as cultural artifacts will form a part of the course. How brands and branding affect consumers, popular culture the companies themselves will also form a part of the course. The more recent trend of influencers and role of social media will also form a part of the course.

Assessment Criteria

1. Understanding of concepts
2. Ability to relate subject to Design
3. Class Participation
4. Expression & Communication Skills

5. Depth of ideas

References

1. Contemporary research in E-branding, Information Science Reference (2009); Subir Bandyopadhyay, Subir Bandyopadhyay
2. Beyond Branding, Kogan Page (2005), Nicholas Ind
3. Brands and Branding, Economist Books(2003); Rita Clifton
4. Value Proposition Design: How to Create Products and Services Customers Want – Alexander Osterwalder
5. Design Management: Using Design to Build Brand Value and Corporate Innovation - Brigitte Borja de Mozota
6. The Fundamentals of Design Management – Kathryn Best
7. Design Thinking: Integrating Innovation, Customer Experience, and Brand Value - Thomas Lockwood

SDG-403 : Design Project V : Social Design (8 Credits)

Social design has gained momentum in design research during the last ten years. The growth of design education has pushed many young designers to seek new markets, which are being created by a substantial number of complex societal challenges; and design research has given designers new tools to help them work with abstract entities such as services and communities rather than just with things. Social design aims not only at designing for greater good but also is aimed to support behavioral change. In this project the students aim to learn how to have an entirely human-centered approach to change a situation positively in favor of a given population bringing about visible physical and behavioral changes. Students would be working closely with a community as drivers of change in terms of problem identification and finding a solution for existing issues. A linear model of exploration, making sense of the situation, proposal and iteration can possibly be followed for the project. The course should address systems and how systemic design can make a difference in society.

ASSESSMENT CRITERIA:

1. Design Process
2. Periodic Evaluation
3. Concept Exploration
4. Design & Prototype

Reference Books

1. Design for the Real World: Human Ecology and Social Change by Victor Papanek
2. Design, When Everybody Designs – An Introduction to Design for Social Innovation by Ezio Manzini and Rachel Coad
3. Change by Design by Tim Brown
4. Creative Confidence: Unleashing the Creative Potential Within Us All by Tom Kelley
5. Systems Thinking for Social Change by David Peter Stroh

SDS-403 : Preparation For Thesis (2 Credits)

The purpose of this course is to introduce and prepare students to work on a full-blown thesis project in the following semester. Correct design methodology in all its detail should be explained through case studies. Discussions on previously executed thesis projects should take place, debating the considerations that one must make. Discussions should include academic as well as real world priorities in a project. Other topics that can be included are techniques of field survey, time and energy management, maintaining a balance between design tasks and other tasks etc.

Suggested Submission: A Well Thought Out and Detailed Tentative Thesis Proposal

Assessment Criteria

1. Understanding of concepts
2. Ability to relate subject to Design
3. Class Participation
4. Expression & Communication Skills
5. Depth of ideas

Reference Books

1. 101 Design Methods: A Structured Approach for Driving Innovation in Your Organization by Vijay Kumar
2. Design Thinking: Process and Methods Manual by Robert Curedale
3. Solving Problems with Design Thinking - Ten Stories of What Works by Jeanne Liedtka
4. The Design Way: Intentional Change in an Unpredictable World by Harold G. Nelson & Erik Stolterman
5. Systems Thinking for Social Change by David Peter Stroh

SDS-401 : SS/ Design For Social Change (2 Credits)

Building new communities that can flourish and become socially successful and sustainable is as important as designing places that are physically, economically and environmentally sustainable. Social sustainability is an issue of public value as well as the wellbeing, quality of life and satisfaction of future residents. It demands a new approach to planning, design and development that we call social design, which needs to be integrated into policy and professional practice across all the disciplines involved in the creation of new communities – much like the way standards of environmental sustainability have become widely adopted in recent years. This course explores planning, designing and developing successful and socially sustainable communities, taking example from reviewing evidence of what makes communities flourish.

Assessment Criteria

1. Understanding of concepts
2. Ability to relate subject to Design
3. Class Participation
4. Expression & Communication Skills
5. Depth of ideas

Reference Books

1. Design for the Real World: Human Ecology and Social Change by Victor Papanek
2. Design, When Everybody Designs – An Introduction to Design for Social Innovation by Ezio Manzini and Rachel Coad
3. Change by Design by Tim Brown
4. Creative Confidence: Unleashing the Creative Potential Within Us All by Tom Kelley

SDP-402 : Technical Studies II : Electricals & Electronics (2 Credits)

The course aims to make students understand critical non-ideal effects in electronic devices and systems and how to address such effects, thus enabling them to design and construct physical electronic circuits that operate as desired. Basics of definition of charge, voltage, current, power, energy, resistor (R), Ohm's law, ideal sources, internal resistance of voltage and current sources, Circuit laws, series and parallel connections, analysis of circuits, usage of the principle of linearity and superposition to solve when multiple sources are present can be covered. The aim

should be to make designers comfortable with electric and electronic circuits so that they may use them freely in future design projects.

Assessment Criteria

1. Understanding of concepts
2. Ability to relate subject to Design
3. Class Participation
4. Expression & Communication Skills
5. Depth of ideas

Reference Books

1. Fundamentals of Electronic Systems Design by Hans Brümmer
2. Digital Design by M. Morris Mano
3. Beginner's Guide to Reading Schematics by Stan Gibilisco
4. Electronics from the Ground Up: Learn by Hacking, Designing, and Inventing by Ronald Quan

PRODUCT DESIGN : SEMESTER 8

SDS-404	Colloquium	2
SDP-404	Design Thesis	16

SDS-404 : Colloquium (2 Credits)

The Design Colloquium is a formal presentation of the Thesis Project. Students will present the work done during the Thesis Project in a series of panels, supported by a slide presentation and verbal presentation. The aim is for the students to present their Project in a professional manner as is expected in the industry. Students should be able to pick the salient points of the design process that are crucial in communicating the project to a panel, and represent them in the most effective way. Panels of a standard size should be made with a consistent visual style with relevant pictures and text. Recommended number of panels is 5-10. They should depict the entire design process comprehensively. Layout of the panels, method of mounting, arrangement of Colloquium Room etc will be assessed as well. Students will also answer questions in a Viva Voce.

Assessment Criteria

1. Presentation Content
2. Presentation Skills
3. Viva Voce

Reference Books

1. TED Talks: The Official TED Guide to Public Speaking by Chris Anderson
2. Presentation Skills for Students by Joan Emden and Lucinda Becker
3. Effective Presentation Skills by Steve Mandel

SDP-404 : Design Thesis Project (16 Credits)

The Design Thesis Project is meant to be a final execution of the Design Process in a professional context, under the guidance of academic & professional mentors. It is a demonstration of both, the understanding of inputs received during 7 semesters of education and also, the preparedness to

independently execute design projects.

Procedure

1. Submission of Thesis Project Proposal to SOD Design Mentor
2. Approval of Thesis Project Proposal by SOD
3. Commencement of Thesis Project (Approximately 4 months)
4. 1st Compulsory Guide Visit (Within 4-6 weeks of Project Start)
5. Submission of 3 copies of Project Documentation to SOD
6. Intimation of Colloquium Date by SOD
7. Colloquium Jury

Design Thesis Proposal Guidelines

Your proposal should consist of the following:

1. Clear statement of research question – Very clearly state what you will be designing. If needed, define terms.

2. Background/Statement of the Problem/Significance of the Project - Be succinct. Clearly support your statement with documentation and references, and include a review of the data that supports the need for your research or creative endeavor. A discussion of present understanding and/or state of knowledge concerning the question/problem or a discussion of the context of the scholarly or creative work. This section presents and summarizes the problem you intend to solve. If your project is a portion of a larger project, the background should describe the project in general, on a large scale, but the Project Description should be all about what you are going to do. This section should also include how your project benefits or impacts the project as a whole and what is gained from your piece of the project.

3. Hypothetical Project Design – A hypothetical project may only be done after express approval from the SOD Academic Advisory Committee. The proposal needs to be very well defined and there should be clear justification as to why the project may only be conducted in this mode. Clear indications of budget and timelines are essential in this case. The work plan may include archival research, translating, ethnographic fieldwork, solitary thinking, or other forms of analysis and synthesis of ideas and concepts in the arts and humanities, with a Design perspective. How will you go about exploring your research question or design project? What will be your methods? If you are not the only person working on the project, who else will be involved?

4. Project Timeline – Give an overview of when you are going to do specific steps of your project. This does not need to be a day to day list but depending on the length of your project it may give an overview biweekly or monthly. Be sure to include time to review/synthesize your data or to reflect on the experience. You should include time to write the final report/paper.

5. Project Budget - Your list of budget items and the calculations done to arrive at a figure for each item should be summarized on the Budget form. You should keep these to remind yourself how the

numbers were developed. Budget Narrative - A narrative portion of the budget is used to explain the line items in the budget. Projects that include travel should be specific about benefit/reasons and locations.

6. Design Deliverables - Describe possible forms of the final product, e.g., publishable manuscript, conference paper, invention, software, exhibit, performance, etc. Be specific about how you intend to share your results or project with others. This section may also include an interpretation and explanation of results as related to your question; a discussion on or suggestions for further work that may help address the problem you are trying to solve; an analysis of the expected impact of the scholarly or creative work on the audience; or a discussion on any problems that could hinder your creative endeavor.

7. Student's Personal Statement – This section is read carefully by the reviewers and does impact their decision. You may wish to include why you want to do this project, what got you interested in it, your career goals, and how this award would further those goals. While it is important, please remember that it shouldn't overpower the rest of the proposal. One- quarter to one-half of the page should be sufficient.

8. Letter of Acceptance from Sponsor – A signed letter of acceptance from sponsor on the Company letterhead that commits to taking you on board for the designated period.

Assessment Criteria

1. Design Process
2. Design Deliverables
3. Submission

Reference Books

1. 101 Design Methods: A Structured Approach for Driving Innovation in Your Organization by Vijay Kumar
2. Design Thinking: Process and Methods Manual by Robert Curedale
3. Solving Problems with Design Thinking - Ten Stories of What Works by Jeanne Liedtka
4. The Design Way: Intentional Change in an Unpredictable World by Harold G. Nelson & Erik Stolterman

GRAPHIC DESIGN: SEMESTER 3

SDG-201	Illustration I
SDG-202	Introduction to Typography
SDG-203	Advanced Photography
SDG-204	Design Project I: Publication Design & Printing
SDS-201	SS/Film Appreciation

SDG-201 Illustration I (4 Credits)

This course gives graphic design students a basic approach to drawing and composition as a means of story-telling or information giving.

The students will be given an introduction to various techniques of illustration and depiction along with the work of famous artists and graphic designers. Illustration should be discussed in all its multifaceted existence, including book illustration, editorial, sequential art, concept art, character development and others. Students will study how illustration techniques have transitioned over time and media & what changes bring about this transition. Students should explore a variety of media and examine the role of the artist as a narrator, problem-solver, symbol-maker, and social/cultural reporter. The course should include instruction and exploration in both traditional and digital media.

Suggested Assignments:

1. Brief exercises on ideation and illustration
2. Exercises in using imagination in illustration
3. Effects of dramatic lighting on subjects and objects can be explored as a technique
4. 2 main projects, 1 by hand and 1 digital in the form of an illustrated book or poster or...

Assessment Criteria

1. Overall growth in skills
2. Exploration of media
3. Research in methods
4. Innovativeness in ideas
5. Execution of ideas

Reference Books:

1. Uzumaki Naruto: Illustrations by Masashi Kishimoto
2. Illustration: A Theoretical & Contextual Perspective by Alan Male
3. Drawing Is Magic: Discovering Yourself in a Sketchbook by John Hendrix
4. Marketing Illustration: New Venues, New Styles, New Methods by Steven Heller
5. The Picture Book: Contemporary Illustration by Angus Hyland
6. 100 Great Children's Picture Books by Martin Salisbury

SDG-202: Introduction to Typography (4 Credits)

The course should cover elements of typography like terminology & measurement, history and evolution of type, printing technologies, principles and conventions of type setting, type hierarchies, type families & classification, readability & legibility, layouts & grids etc.

They should study letter forms and understand fundamental typographic principles with an emphasis on the vocabulary of typographic form and its relationship to message/purpose. This course will include lectures, discussions, critiques, presentations and creative work. Participation in discussion and critique is vital to the success of the class. Assignments will include researching designed artifacts, reading from recommended books/web sites, developing/creating typographical work, testing knowledge of elements of typography and giving presentations.

Assessment Criteria:

1. Understanding of Concepts
2. Application of Concepts
3. Exploration and Ideas
4. Quality of execution

Reference Books:

1. Design Diaries: Creative Process in Graphic Design, Mark Adams, Lucienne Roberts, Rebecca Wright
2. Thinking with Type: A Critical Guide for Designers, Writers, Editors, & Students, Ellen Lupton
3. The Elements of Typographic Style, Robert Bringhurst
4. The Complete Manual of Typography, James Felici
5. Stop Stealing Sheep & Find Out How Type Works, Erik Spiekermann
6. Typography: Macro + Micro Aesthetics (Fundamentals of typographic design) Willi Kunz, Niggli

SDG-203 Advanced Photography (4 Credits)

This is the second module of photography, after an introductory module in the foundation year of study. The aim is to build skills as well as sensitivity to photography, specific to the Graphic Design discipline. Some of the themes that may be explored in depth are:

Landscape & Architectural Photography: Picture framing, camera angles, Tripods and their importance, Types of lenses and suitability for subjects, Vantage points and how they affect your photo, Lines, curves, and shapes in your photographs, the importance of foreground interest and how background imagery influences photos, recommended gear and Camera techniques, Lighting and lighting equipment for indoors and outdoors.

Macro photography: Concept of bokeh and how it may be captured; Effects of light in macro photography, Magnification & reproduction ratios, True Macro Vs Close-Up, Macro Photography with regular lenses, Depth of field and shutter speed experiments, Directional light and how to manipulate it, Avoiding lens flares,

Portrait Photography: In a studio and non-studio setting, considerations, tricks and light study, capturing identity and personality in portraits, creating empathy, working with subjects and creating comfort

Post Processing: Digital corrections in photography, Digital Dark Room Workflow

Assessment Criteria

1. Understanding the medium
2. Technical understanding
3. Quality and depth of photography
4. Creative Expression
5. Class Participation

Reference Books

1. Advance Photography by M. Langford
2. Applied Depth of Field by Blaker
3. Landscape Photography by H. Angel
4. Photomacrography: An introduction by W. White
5. Visual Aids and Photography in Education by Langford
6. Spencer's Colour Photography in Practice
7. Applied photography by Arnold

Design Project I : Publication Design (8 Credits)

This project is meant to initiate students into the process of Graphic Design for printing. In designing a publication, it is crucial to address form and function while keeping technical considerations of printing in mind. All the theoretical inputs of this semester, including typography, illustration, photography etc will come together to form a holistically designed product that will meet the design brief. A central theme and/or type of book may be chosen for ease of selection.

Students should then work on content, format, processes & papers available, binding, printing etc to design a book that is complete in all respects of design. The design process right from research to the layout should be rigorously followed. If possible, all photography and illustration should be done in original by the students themselves. Typographic principles should be used to design a legible and balanced grid for the book. The central concept for the book should reflect in all aspects of its design, including the layout, format, selection of fonts, colours etc.

A full size final prototype is a must for this project.

ASSESSMENT CRITERIA:

1. Design Process
2. Periodic Evaluation
3. Concept Exploration
4. Design & Prototype

REFERENCE BOOKS:

1. Design Research: Methods and Perspectives by Brenda Laurel and Peter Lunenfeld.
2. Book Design By Andre Haslam
3. On Book Design by Richard Hendel
4. Bookmaking: Editing, Design, Production by Marshall Lee

SDS-201: Film Appreciation (2 Credits)

This course is meant to explore questions like, “How is meaning created in film? How do content, form and contexts come together? How are films received? What are the cultural, ideological and theoretical perspectives?”

This course will also juxtapose Indian cinema with global cinema, comparing and contrasting Western and Eastern art forms. We will go over notable periods in film history, watching relevant movies. Themes include Italian Neo realism, French New wave, Indian Regional, New Hollywood, Japanese Cinema, Bollywood/Tollywood etc. We will also discuss feminist, economic, historical, psychological, and sociopolitical approaches to film and how they hold relevance in a developing society like India. We will study the various aspects of film including the story line, editing, sound, cinematography, music, editing (montage), composition (mise en scene) and camera movement, screenwriting, directing, and performance. The course will be conducted through movie screenings, detailed film analyses, class presentations by students, class discussions and written essays.

ASSESSMENT CRITERIA

1. Understanding of concepts
2. Ability to relate subject to Design
3. Class Participation
4. Expression & Communication Skills
5. Depth of ideas

REFERENCE BOOKS

1. The oxford guide to film studio / Hill, John. : Oxford

2. British film history design / Ede, Laurie.N, I.B.Tauris,
3. Signs and Meaning in the Cinema By Peter Wollen, Secker & Warburg, 1969
4. Magic and Myth of the Movies By Parker Tyler, Simon & Schuster, 1970

GRAPHIC DESIGN: SEMESTER 4

SDG-205	Moving Graphics
SDG-206	Introduction to Storyboarding
SDG-207	Introduction to Animation
SDG-208	Design Project II: Typography Design
SDS-202	SS/Policy & Politics
SDG-209	Design Exposure Visit

SDG-205: Moving Graphics (2 Credits)

Moving Graphics can be a powerful tool for supporting visual problem solving, and interactivity plays a central role in harnessing the users' creativity. The course aims at introducing graphic design students to the basics of Motion Design along with its social and historical context.

A brief introduction to storyboarding and planning is to be followed by basics of After Effects/Premiere keyframe concepts and principles. Preparing content from photoshop and illustrator, working with still images and graphics to create animation and animation in 3D to be explored. Text animation, animating shapes, 3d space and layers can be included. Working with audio, understanding pixel aspect ratios and editing can also be a part of the course.

Assessment Criteria:

1. Conceptual and medium understanding
2. Technical concepts understanding
3. Class Participation

Reference Books:

1. After Effects Apprentice: Real World Skills for the Aspiring Motion Graphics Artist (Apprentice Series); Chris & Trish Meyer
2. Animated Storytelling: Simple Steps For Creating Animation and Motion Graphics; Liz Blazer
3. Type in Motion: Innovations in Digital Graphics; by Jeff Bellantoni & Matt Woolman

SDG 206 - Introduction To Storyboarding (2 Credits)

Introduction to storyboarding as an essential tool for planning motion graphics and animation forms a part of the course. Students need to be introduced to basic components of storyboards, Rule of Thirds, Foreground, Middle Ground and Background, Developing Drawing Skills, Shot Angles etc need to be explored. Design composition and colour, sequencing, action in storyboard, light source and depth of field can also be explored. Building the Storyboard template and types of templates can be explored as well.

Assessment Criteria:

4. Depth of Understanding concepts
5. Practical Application
6. Class Participation & group work

Reference Books:

1. The Art of the Storyboard: Storyboarding for Film, TV, and Animation; John Hart
2. Professional Storyboarding: Rules of Thumb; Sergio Paez and Anson Jew

SDG 207 - Introduction To Animation (4 Credits)

This course aims at introducing students to the basics of animation design. Basic understanding of character, theory behind character psychology and personality need to be explored. Understanding of shapes and their meanings in context of creating characters and their features is required. Body types and body design; breakdown of body and symmetrical characters in 5 basic views, exploring different angles for character, importance of storyboarding, visual storytelling concepts, developing plots and creating story lines.

Students should be encouraged to create a short animation film of their own.

Assessment Criteria:

1. Depth of Understanding concepts
2. Practical Application
3. Class Participation & group work

Reference Books:

1. Art and Animation (Art & Design Profile) by Paul Wells
- REST BASED ON SOFTWARE SELECTED

SDS-202: SS/Policy & Politics (2 Credits)

Art is conditioned and created by the social, political and ecological environment that surrounds any human-creator. It also simultaneously acts as a method of displaying one's opinions i.e. whether supporting or dissenting to established norms. This short course is aimed at introducing the students to basic concepts that form part of an everyday political life of a human. By virtue of being a Citizen, a human has certain Rights and Obligation. Understanding the historical genesis of the State and Government can help a human better place their ideas of right and wrong in a theoretical context while understanding that every human is eventually created by the political and social world around them.

Design as a process for the benefit of end users is influenced by a myriad of factors. We are surrounded and affected by these directly or indirectly in the form of government social & organizational policies. This course is an introduction to how policies affect and influence societies. It talks about the role of policies in shaping economy that in turn fuels the industry of design among all others. We will go through basic macroeconomic indicators like GDP that shape policy-making. We will also look at basic tenets of politics & evaluate features of utilitarianism, classical & neo classical marxism and democracy.

A suggested lecture schedule is as follows:

1. Understanding Construction of State
2. Introduction to Politics and Artists as Political Culturists
3. Governance and Policy: Universal Methods
4. Placing the Human as a Political Being
5. Understanding Art as political Dialogue

Lectures and Visual Narrative supported by movie screenings can be used as the method of instruction along with Case Studies on Art and Political Dissent in the 21st Century.

Assessment Criteria

1. Understanding of concepts
2. Ability to relate subject to Design
3. Class Participation
4. Expression & Communication Skills
5. Depth of ideas

Reference Books

Introduction to Political Theory, 2nd Ed. 2009. John Hoffman. Ch1, 2 and 3

FOR DEEPER STUDY:

1. A History of Political Thought: Plato to Marx by Mukherjee
2. Foundations of Indian Political Thought: An Interpretation - From Manu to the Present Day by V. R. Mehta
3. Western Political Thought by Gauba O P

SDP-210 : Design Exposure Visit (2 Credits)

The **Design Exposure Visit** module is meant to expose students to field experiences of multiple kinds. There should be visits to manufacturing facilities to help students understand what mass production entails. If possible, visits to smaller manufacturing set ups should also be included to help students mentally compare the two. There should be visits to Design Studios to help students understand how design consulting works. A visit to another design institution will help build curiosity and healthy competition. There should be some field assignments given that help the students dig deeper and take initiative in fact finding and field exploration. Design is a fledgling field yet so a deeper exploration of resources is important, as is awareness of other parallel fields that design works in tandem with, like engineering, printing, production, supply chains etc.

The tour can take place in a nearby city or a further away city but it should involve outstation travel to fully immerse students in the experience, without the usual distractions.

Assessment Criteria:

1. Perception & Sensitivity to Surroundings
2. Observation & Records
3. Ability to relate to Design

SDG-208 : Design Project II – Advanced Typography Design (8 Credits)

Building on the previous introduction to typography, this course will have a further exploration of expressive visual communication of text. A typographic project involving bilaterals that feature text prominently should be undertaken. Type on posters, brochures, handouts, flyers etc should be worked upon for this project. Logotype should be explored to understand what creates a formal language in type.

This course will further the sensitivity to the formal qualities of letterforms while refining technical skills for hand and digital type composition. Students should be guided in the selection and arrangement of type for effective legibility and readability while exploring the legibility constraints of

type and color. The project is aimed at refining the visual skills for shaping verbal messages through typographic design and to explore the expressive range of typography as a primary visual and illustrative element.

Students should be able to create a functional organization of complex information through effective hierarchy and typographic expression. Students should experiment with solutions based on a target audience for their communication and make modifications to their solutions based on the need. A design process should be followed to identify and resolve visual communication issues.

Assessment Criteria

1. Design Process
2. Periodic Evaluation
3. Concept Exploration
4. Design & Prototype

Reference Books

1. Thinking in Type by Alex White
2. Thinking with Type by Ellen Lupton
3. Typography Workbook by Timothy Samara
4. Stop Stealing Sheep and Find Out How Type Works by Erik Spiekermann
5. Typographic Design: Form and Communication by Rob Carter, Ben Day and Philip Meggs

PRODUCT DESIGN : SEMESTER 3

SDG-301	Illustration 2: Digital	4
SDG-302	Digital Design	4
SDG-303	Design Project III: Space Design	8
SDG-304	Self Study (Summers)	2
SDS-301	SS/Semantics & Semiology	2
	TOTAL	20

SDG-301 : Illustration 2 : Digital (4 Credits)

The objective of this course is creating illustration in a digital environment and reinforcing illustration skills and develop methods as they relate to the digital medium. This course examines the use of computer as a medium and as an additional tool for Illustrators with emphasis on realistic modeling approaches and rendering skills, as well as expressive and historical perspectives that an illustrator-designer must have. The course should make students more familiar with digital image-making applications and equipment and help them achieve professional delivery and presentation of digital illustration.

Topics including the study of illustration as visual interpretation of words, concepts, and ideas should be covered to build creative skills. With the aim of developing digital image-making techniques and incorporating them into the illustration process, students can be challenged by assignments typical of those applied in the professional arena such as advertising, publishing, and editorial illustration.

Developing illustrations using traditional thumbnails, sketches, and color studies, and complete the final artwork using industry standard software in a digital environment with digital tablets and pens is to be aimed at. Students will learn to render in varying styles, and begin to develop a digital illustration style of their own. Final digital illustrations will be expected to demonstrate the same qualities as traditional illustration, including but not limited to style, composition, color theory, perspective, and concept.

Assessment Criteria:

1. Depth of Understanding concepts
2. Practical Application
3. Class Participation & group work

References

1. Digital Illustration Fundamentals: Vector, Raster, WaveForm, NewMedia with DICF, DAEF and ASNMF ; Wallace Jackson; Apress; 1st ed. edition (6 May 2016)
2. Digital Illustration: A Masterclass in Digital Image-Making; Lawrence Zeegen; Rotovision (1 March 2005)
3. Perspective Sketching: Freehand and Digital Drawing Techniques for Artists & Designers; Jorge Paricio; Rockport Publishers; Ill edition (1 January 2015)
4. Pen and Mouse: Commercial Art and Digital Illustration; Angus Hyland; Watson-Guptill (1 August 2001)

SDG - 302 : Digital Design (4 Credits)

This module is meant to develop an understanding of the digital medium as relevant to graphic designers. It is a study of visual communication in the digital medium with basics of interface design. Students should learn to work with elements of digital design like pictures, text, calls to action, white space etc while considering design principles of navigation and ergonomics of visual communication. The digital medium includes websites, apps, online catalogues, online forums etc, any of which may be selected for a deeper study and final assignments. Knowledge of typography, use of white space, graphic composition and the all important grid should be amply evident. Incorporation of principles of gestalt, colour theory and semantics will be expected in the output of the course. Adaptive design for multiple screen sizes may be included be time permits.

It is recommended to take up case studies in the initial classes for a realistic understanding of field requirements. Students should become familiar with terminology, software and equipment required for digital design.

Assessment Criteria

1. Design Process
2. Periodic Evaluation
3. Concept Exploration
4. Design & Prototype

Recommended Books

1. Graphic Design: The New Basics, Ellen Lupton and Jennifer Cole Phillips, Princeton Architectural Press, 2008, ISBN-10: 1568987706 <http://gdbasics.com/index.php>
2. Design Basics, Lauer, David and Stephen Pentak. Thomson Wadsworth, 2008.

3. Designer & the Grid by Julia Thrift and Lucienne Roberts, RotoVision (February 1, 2005), ISBN-10: 2880468140
4. Design Elements: A Graphic Style Manual, Timothy Samara, Rockport Publishers (April 1, 2007), ISBN-10: 1592532616
5. Universal Principles of Design, Lidwell, Holden & Butler, Rockport Publishers, 2003, 1-59253-007-9

SDG - 303 : Design Project III: Space Design (8 Credits)

The aim of this project is to develop spatial design, planning and visualisation skills in students. The Graphic Design students will work more deeply on the display and representation aspects of the selected space while Product Design students will work on more structural and object related aspects. Ideally, students of both disciplines should work in tandem so that they complement each other's existing knowledge and skills and build new spatial design skills together.

Designing for spaces helps us to understand the functions of different spaces and the behaviors that are appropriate within them. Sometimes the functionality is inherent in the form, at other times, the functionality is a result of learned understanding of the meaning of the form.

This course aims at delegating the key knowledge and skills for effective space planning of a given unit. The essentials of effective space planning including the evolution of a space, determining user needs, planning strategies and layouts including complete physical and visual space, how to make the space flexible and managing change in space needs to be explored.

The project can aim at selecting an unfinished space in and around the university and giving possible solutions, layouts and visuals of how the finished space would look like, define what purpose the space would serve and how to go about making the space finished. Another option could be design of an exhibition or retail space of temporary or permanent nature. Deliverables should include drawings, spec sheets, models, moodboards, renderings, photographs etc as relevant. Documentation of the entire design process will be essential to the submission.

Assessment Criteria:

1. Design Process
2. Periodic Evaluation
3. Concept Exploration
4. Design & Prototype

References

1. Towards a New Architecture ; Le Corbusier

2. Elements of Spacemaking ; Yatin Pandya
3. SketchUp for Interior Design: 3D Visualizing, Designing, and Space Planning; Lydia Cline
4. Operative Design: A Catalogue of Spatial Verbs; Anthony Di Mari, Nora Yoo
5. Space Planning Basics; Mark Karlen

SDG-304 : Self-Study (2 Credits)

This project will be a documentation of an Indian folk art with faculty guidance kept to the bare minimum. The process, once initiated, will be taken further by the students through self initiative and site visits over the vacations. This will help students look at folk art in a holistic context and understand how representation is an important mirror of society and culture. The study should include cultural, social, economic and material aspects of the selected art form. Students will also learn about structuring their research and putting it across in a coherent manner. The documentation should answer the 5 W's: WHAT is it exactly? What creates the identity of the folk art? What sets it apart? What characterizes it? What motifs, colours (ETC) are used? What is the historical/cultural significance thereof? WHO practices the art form? What skills are required? WHO consumes (buys/uses) it? WHERE is it done? Geographical, cultural, material significance thereof WHY is it done? WHY was it done? What is the present situation? What will happen in the future? HOW is it done? What are the challenges? And opportunities? The documentation should end in a cohesive, structured document.

Assessment Criteria

1. Depth of Research
2. Understanding
3. Coherence of presentation

Reference Books

1. Crafting Indian Scripts by Jaya Jaitly and Subrata Bhowmick
2. The Artistry of Handwork by Jaya Jaitly
3. Visvakarmā's children by Jaya Jaitly
4. Handmade in India by Aditi Ranjan and M.P. Ranjan

SDS-301 : Semantics & Semiology (2 Credits)

This course offers an introduction to the basic concepts and methods in the analysis of natural language meaning in the context of product & graphic design. The course needs to be concerned with human interfaces, i.e. with that layer of cognition in which we experience how we interact with our environment which renders things understandable , meaningful , transparent , alive and useable or that layer of cognition which centers us in our own experiential world. It seeks to understand users' understanding of their practices of interfacing with designed things and provide strategies for designers that can either afford or supportively intervene in that understanding.

Students to be introduced to the formal study of the cognitive system that computes the meanings of complex linguistic expressions. Basics of semantics, semantics in structuralism vs. in cognitive/generative approaches and semiotic foundations along with levels of meanings lexical, sentence, utterance; the principle of compositionality; semantics and pragmatics can be studied. Categorization, mentalism, context, inference and speech act, event semantics can be looked at. The objective to relate to design should follow the logic of product forms, how people perceive them and derive meanings can be explored. The focus needs to be on analysis of people's perceptions and how they understand the crowded market place full of similar products. Perceptual maps that reveals how people have understood the competing products and map them internally in their mind can be explored.

Its is important for designers to be able to look at word and image beyond the surface level and delve deeper in order to come up with more meaningful design that serves the actual needs.

Assessment Criteria

1. Understanding of Concepts
2. Ability to relate subject to Design
3. Class Participation
4. Expression & Communication Skills
5. Depth of Ideas

References

1. An Introduction to Linguistics: Language, Grammar and Semantics; Syal; Prentice Hall India Learning Private Limited; 2 edition (2007)
2. Introducing Semiotics: A Graphic Guide; Paul Cobley (Author), Litza Jansz (Illustrator); Icon (2 September 2010)
3. The Anatomy of Language: Saying What We Mean (Routledge Library Editions: Semantics and Semiology); Marjorie Boulton; Routledge; 1 edition (25 November 2016)
4. The Visual Language of Comics: Introduction to the Structure and Cognition of Sequential Images. (Bloomsbury Advances in Semiotics); Neil Cohn; Bloomsbury Academic; 1 edition (5 December 2013)

5. Visible Signs: An Introduction to Semiotics in the Visual Arts; David Crow; Bloomsbury Visual Arts; 1 edition (6 July 2017)

GRAPHIC DESIGN : SEMESTER 6

SDG-306	Introduction to Video & Scripting-Writing	4
SDG-307	Packaging Design	4
SDS-303	Portfolio Building	2
SDG-308	Design Project IV: Identity Design	8
SDS-302	SS/Media & Hegemonies	2

SDG-306 : Introduction to Video & Script Writing (2 Credits)

The course deals with the process of creating a theatrical screenplay. A brief introduction to what screenwriters do and what makes a good screen story. Introduction to genres and plot, story and characters, climax and ending. Preparing the outline, screenplay layout, writing action and dialogue. Introduction to video and elements of video making. Should cover visual design, sketching and planning, composition along with cinematography and knowledge of camera lenses, depth of field, exploiting light, natural and artificial, audio and image control should be explored.

Students can do a quick assignment for a warm up exercise and then they can work in groups on a larger project that starts from scripting and storyboarding, goes on to set design (if necessary), shot set-up, filming and finally involves editing to reach a final product. Fiction or non-fiction genres can be included as per interest.

Assessment Criteria:

1. Conceptual and medium understanding
2. Concepts & Execution
3. Attendance & Class Participation

Reference Books:

1. Digital Filmmaking by Mike Figgis; Faber & Faber
2. The Oxford Guide to Film Studies by Hill John and Gibson Pamela Church; OUP UK
3. Screenplay: The Foundations of Screenwriting by Syd Field; RHUS

SDG-307: Packaging Design (2 Credits)

This course evaluates the basics of what goes in packaging design. Understanding what goes into laying the foundation for packaging innovation by both defining and tightening the required design parameters. The course should cover parameters and setting expectations, concept creation, Structural Development and Visual Design. Study can include graphic design for the folded carton, the materials, sizes and constraints related to their development. Label design for bottles and containers used in the food and medical industry can be explored. Related discussions into the concepts and graphic design applications of primary and secondary packaging and structural and physical properties of packaging can also be discussed.

Short assignments in brand study and analysis with respect to packaging can be done as warm up exercises. After that the students should select one final product and work on packaging solutions for the same.

Assessment Criteria:

1. Conceptual and medium understanding
2. Concepts & Execution
3. Attendance & Class Participation

Reference Books:

1. Packaging Design by Bill Stewart; Laurence King Publishing
2. Packaging Design Strategy by Bill Stewart; CRC Press

SDS-303 : Portfolio Building (4 Credits)

The design portfolio is one of the most important things in a designer's arsenal. It's an easy way to showcase a designer's strengths and let clients know what type of work interests them most. Portfolio Building would be introducing the students on how to present their work effectively and efficiently to prospective employers and clients. The students need to learn to organize their work, brand themselves, support and explain their work, using social channels to build out and optimizing their portfolio in terms of usability and flexibility in terms of its viewers.

The course should impart skills on designing the content, the navigation, as well the look of the digital portfolio. The module should be structured more like a workshop than a course with regular reviews to assess student progress.

ASSESSMENT CRITERIA:

1. Attendance & Class Participation
2. Concept Exploration
3. Design & Prototype

Reference Books:

1. My Graphic DNA; Portfolio Design & Self- Promotion; Design De Portfolios & Autopromotion; Diden De Portfolios Y Autopromocion; by Wang Shaoqiang; Promopress
2. Drawing for Product Designers (Portfolio Skills: Product Design) by Kevin Henry; Laurence King Publishing

SDG-308 : Design Project IV – Branding & Identity (2 Credits)

Large organizations with layers of management require a thorough brand identity system that provides a unified vision and tools that help everyone build the brand and to portray the right image of itself to the consumer. The project requires the students to develop logo, packaging, web design, social media graphics, business cards and/if the uniform employees wear for a brand as deliverables. Typography, color palette, form/shape, logo, website, product packaging (if any) and brand style guide (logo usage rules, typeface system, color palette, layout guidelines etc.) need to be taken care of as parameters.

Students should be able to analyze existing brand language and use that understanding to develop a new identity of their own.

ASSESSMENT CRITERIA:

1. Design Process
2. Periodic Evaluation
3. Concept Exploration
4. Design & Prototype

Reference Books:

1. Branding and Product Design; An Integrated Perspective; Monika Hestad
2. Designing Brand Identity: An Essential Guide for the Whole Branding Team by Alina Wheeler; John Wiley & Sons

SDS-302 : SS/Media & Hegemonies (2 Credits)

Communication and media permeate our society. This course combines visual, aural, technological, computer, theatrical, temporal, and architectural forms of media, communication and its culture. We set to examine culture creating industries as the internet, radio, television, movies, newspapers, advertising, and public relations to understand how media has the power to create and change narratives. The media touch our lives in intimate ways, in our tastes, pleasures, and dreams; they also wield significant political, economic, and social power. The aim of this course is to analyze how media can affect and influence our daily lives by its permeation into our existing systems and can play a vital role in creating and building consensus. Basic knowledge of the communication system, the uses of media, and means of objectively evaluating media performance in light of media problems, promises and potential can be explored. Gramsci's theory of Media Hegemony can be discussed in context of how it would fit in the context of design. Chomsky's work on sociopolitical analysis; political, social, and economic history; and critical assessment of current political circumstance also to be discussed.

Assessment Criteria

1. Understanding of concepts
2. Ability to relate subject to Design
3. Class Participation
4. Expression & Communication Skills
5. Depth of ideas

Reference Books:

1. India Connected: Mapping the Impact of New Media by Sunetra Sen Narayan, Shalini Narayanan; Sage Publications India Private Limited
2. Media Control: The Spectacular Achievements of Propaganda by Noam Chomsky; Seven Stories Press

GRAPHIC DESIGN : SEMESTER 7

SDG-401	Internship (Summer Vacation)	4
SDS-402	Design Management & Entrepreneurship	2
SDG-402	Copy Writing	2
SDG-403	Design Project V: Social Design	8
SDS-403	Preparation for Thesis	2
SDS-401	SS/Design for Social Change	2

SDS-402 : Design Management & Entrepreneurship (4 Credits)

Design is inextricably linked to the way in which society, environment & business interact. The outcome of a design project is seen in products, services and processes. The course would explore the process involved in management of these projects and also design as an activity of user-centered, problem-solving process. It would also explore managing all aspects of design at two different levels – corporate & project. There will be an in-depth analysis of design at various layers of a corporate (1. Level of operations, tangible & touch, 2. At the level of tactics, systems & processes 3. At the level of strategy, policy & mission). Along with this the course also focuses on branding and identity. Understanding how branding and brand identity are strategic points of view and not merely advertising activities will form an important part of the course. Exercises that explore designing brand identities that reflect the values of the organization can be explored. Branding as a culture of the product and borrowing from the disciplines of anthropology, history, and sociology to understand products as cultural artifacts will form a part of the course. How brands and branding affect consumers, popular culture the companies themselves will also form a part of the course. The more recent trend of influencers and role of social media will also form a part of the course.

Assessment Criteria

1. Understanding of concepts
2. Ability to relate subject to Design
3. Class Participation

4. Expression & Communication Skills
5. Depth of ideas

References

1. Contemporary research in E-branding, Information Science Reference (2009); Subir Bandyopadhyay, Subir Bandyopadhyay
2. Beyond Branding, Kogan Page (2005), Nicholas Ind
3. Brands and Branding, Economist Books(2003); Rita Clifton
4. Value Proposition Design: How to Create Products and Services Customers Want – Alexander Osterwalder
5. Design Management: Using Design to Build Brand Value and Corporate Innovation - Brigitte Borja de Mozota
6. The Fundamentals of Design Management – Kathryn Best
7. Design Thinking: Integrating Innovation, Customer Experience, and Brand Value - Thomas Lockwood

SDG-402 : Copy Writing (2 Credits)

This course aims at introducing the students in terms of how to write copy that is appealing to the consumer. The copywriter would aim to inform thereader, persuade them to change their view or encourage them to take action. This course would prove helpful in generating content like slogans and taglines, websites, brochures, leaflets, mails, articles, user guides, videos or scripts and more for the projects they have undertaken thereby giving them knowledge on what is the most effective means of communicating a design into a market full of different kinds of consumers. Elements of copywriting need to be covered including aim, features, strategy, benefits, audience and their desired reaction. Copywriting should introduce students to the art of creating marketing communications messages to persuade/influence all categories of consumers. Students should learn the basics of strategy development, creative thinking and marketing communications tools. Emphasis to be placed on the creation of advertising messages for both print and electronic media and how a graphic designer can contribute.

Assessment Criteria

1. Understanding of concepts
2. Ability to relate subject to Design
3. Class Participation
4. Expression & Communication Skills
5. Depth of ideas

Reference Books

1. Writing and Script A Very Short Introduction and Andrew Robinson
2. Finish The Script! A College Screenwriting Course in Book Form by Scott King
3. The Copywriter's Handbook: A Step-By-Step Guide To Writing Copy That Sells by Robert W. Bly
4. Ogilvy on Advertising by David Ogilvy

SDG-403 : Design Project V : Social Design (2 Credits)

Social design has gained momentum in design research during the last ten years. The growth of design education has pushed many young designers to seek new markets, which are being created by a substantial number of complex societal challenges; and design research has given designers new tools to help them work with abstract entities such as services and communities rather than just with things. Social design aims not only designing for greater good but also is aimed to support behavioral change. In this project the students aim to learn how to have an entirely human-centered approach to change a situation positively in favor of a given population bringing about visible physical and behavioral changes. Students would be working closely with a community as drivers of change in terms of problem identification and finding a solution for existing issues. A linear model of exploration, making sense of the situation, proposal and iteration can possibly be followed for the project. The course should address systems and how systemic design can make a difference in society.

ASSESSMENT CRITERIA:

1. Design Process
2. Periodic Evaluation
3. Concept Exploration
4. Design & Prototype

Reference Books

1. Design for the Real World: Human Ecology and Social Change by Victor Papanek
2. Design, When Everybody Designs – An Introduction to Design for Social Innovation by Ezio Manzini and Rachel Coad
3. Change by Design by Tim Brown
4. Creative Confidence: Unleashing the Creative Potential Within Us All by Tom Kelley
5. Systems Thinking for Social Change by David Peter Stroh

SDS-403 : Preparation For Thesis (2 Credits)

The purpose of this course is to introduce and prepare students to work on a full-blown thesis project in the following semester. Correct design methodology in all its detail should be explained through case studies. Discussions on previously executed thesis projects should take place, debating the considerations that one must make. Discussions should include academic as well as real world priorities in a project. Other topics that can be included are techniques of field survey, time and energy management, maintaining a balance between design tasks and other tasks etc.

Suggested Submission: A Well Thought Out and Detailed Tentative Thesis Proposal

Assessment Criteria

1. Understanding of concepts
2. Ability to relate subject to Design
3. Class Participation
4. Expression & Communication Skills
5. Depth of ideas

Reference Books

1. 101 Design Methods: A Structured Approach for Driving Innovation in Your Organization by Vijay Kumar
2. Design Thinking: Process and Methods Manual by Robert Curedale
3. Solving Problems with Design Thinking - Ten Stories of What Works by Jeanne Liedtka
4. The Design Way: Intentional Change in an Unpredictable World by Harold G. Nelson & Erik Stolterman
5. Systems Thinking for Social Change by David Peter Stroh

SDS-401 : SS/ Design For Social Change (2 Credits)

Building new communities that can flourish and become socially successful and sustainable is as important as designing places that are physically, economically and environmentally sustainable. Social sustainability is an issue of public value as well as the wellbeing, quality of life and satisfaction of future residents. It demands a new approach to planning, design and development that we call social design, which needs to be integrated into policy and professional practice across all the disciplines involved in the creation of new communities – much like the way standards of

environmental sustainability have become widely adopted in recent years. This course explores planning, designing and developing successful and socially sustainable communities, taking example from reviewing evidence of what makes communities flourish.

Assessment Criteria

1. Understanding of concepts
2. Ability to relate subject to Design
3. Class Participation
4. Expression & Communication Skills
5. Depth of ideas

Reference Books

1. Design for the Real World: Human Ecology and Social Change by Victor Papanek
2. Design, When Everybody Designs – An Introduction to Design for Social Innovation by Ezio Manzini and Rachel Coad
3. Change by Design by Tim Brown
4. Creative Confidence: Unleashing the Creative Potential Within Us All by Tom Kelley

GRAPHIC DESIGN : SEMESTER 8

SDS-404	Colloquium	2
SDG-404	Design Thesis	16

SDS-404 : Colloquium (2 Credits)

The Design Colloquium is a formal presentation of the Thesis Project. Students will present the work done during the Thesis Project in a series of panels, supported by a slide presentation and verbal presentation. The aim is for the students to present their Project in a professional manner as is expected in the industry. Students should be able to pick the salient points of the design process that are crucial in communicating the project to a panel, and represent them in the most effective way.

Panels of a standard size should be made with a consistent visual style with relevant pictures and text. Recommended number of panels is 5-10. They should depict the entire design process comprehensively. Layout of the panels, method of mounting, arrangement of Colloquium Room etc will be assessed as well. Students will also answer questions in a Viva Voce.

Assessment Criteria

1. Presentation Content
2. Presentation Skills
3. Viva Voce

Reference Books

1. TED Talks: The Official TED Guide to Public Speaking by Chris Anderson
2. Presentation Skills for Students by Joan Emden and Lucinda Becker
3. Effective Presentation Skills by Steve Mandel

SDG-404 : Design Thesis Project (16 Credits)

The Design Thesis Project is meant to be a final execution of the Design Process in a professional context, under the guidance of academic & professional mentors. It is a demonstration of both, the understanding of inputs received during 7 semesters of education and also, the preparedness to independently execute design projects.

Procedure

1. Submission of Thesis Project Proposal to SOD Design Mentor
2. Approval of Thesis Project Proposal by SOD
3. Commencement of Thesis Project (Approximately 4 months)
4. 1st Compulsory Guide Visit (Within 4-6 weeks of Project Start)
5. Submission of 3 copies of Project Documentation to SOD
6. Intimation of Colloquium Date by SOD
7. Colloquium Jury

Design Thesis Proposal Guidelines

Your proposal should consist of the following:

1. Clear statement of research question – Very clearly state what you will be designing. If needed, define terms.

2. Background/Statement of the Problem/Significance of the Project - Be succinct. Clearly support your statement with documentation and references, and include a review of the data that supports the need for your research or creative endeavor. A discussion of present understanding and/or state of knowledge concerning the question/problem or a discussion of the context of the scholarly or creative work. This section presents and summarizes the problem you intend to solve. If your project is a portion of a larger project, the background should describe the project in general, on a large scale, but the Project Description should be all about what you are going to do. This section should also include how your project benefits or impacts the project as a whole and what is gained from your contribution to the project.

3. Hypothetical Project Design – A hypothetical project may only be done after express approval from the SOD Academic Advisory Committee. The proposal needs to be very well defined and there should be clear justification as to why the project may only be conducted in this mode. Clear indications of budget and timelines are essential in this case. The work plan may include archival research, translating, ethnographic fieldwork, solitary thinking, or other forms of analysis and synthesis of ideas and concepts in the arts and humanities, with a Design perspective. How will you go about exploring your research question or design project? What will be your methods? If you are not the only person working on the project, who else will be involved?

4. Project Timeline – Give an overview of when you are going to do specific steps of your project. This does not need to be a day to day list but depending on the length of your project it may give an overview biweekly or monthly. Be sure to include time to review/synthesize your data or to reflect on the experience. You should include time to write the final report/paper.

5. Project Budget - Your list of budget items and the calculations you have done to arrive at a figure for each item should be summarized on the Budget form. You should keep these to remind yourself

how the numbers were developed. Budget Narrative - A narrative portion of the budget is used to explain the line items in the budget. Projects that include travel should be specific about benefit/reasons and locations.

6. Design Deliverables - Describe possible forms of the final product, e.g., publishable manuscript, conference paper, invention, software, exhibit, performance, etc. Be specific about how you intend to share your results or project with others. This section may also include an interpretation and explanation of results as related to your question; a discussion on or suggestions for further work that may help address the problem you are trying to solve; an analysis of the expected impact of the scholarly or creative work on the audience; or a discussion on any problems that could hinder your creative endeavor.

7. Student's Personal Statement – This section is read carefully by the reviewers and does impact their decision. You may wish to include why you want to do this project, what got you interested in it, your career goals, and how this award would further those goals. While it is important, please remember that it shouldn't overpower the rest of the proposal. One- quarter to one-half of the page should be sufficient.

8. Letter of Acceptance from Sponsor – A signed letter of acceptance from sponsor on the Company letterhead that commits to taking you on board for the designated period.

Assessment Criteria

1. Design Process
2. Design Deliverables
3. Submission

Reference Books

1. 101 Design Methods: A Structured Approach for Driving Innovation in Your Organization by Vijay Kumar
2. Design Thinking: Process and Methods Manual by Robert Curedale
3. Solving Problems with Design Thinking - Ten Stories of What Works by Jeanne Liedtka
4. The Design Way: Intentional Change in an Unpredictable World by Harold G. Nelson & Erik Stolterman