Interaction Design Course Content

1st Semester

DE 613 Visual Languages syntactics

Course Content *(List of the topics/sub-topics to be covered in the lectures/practicals/assignments)***:**

- Relationship between syntactic, semantics and pragmatics. Viewpoints, point of reference and framing. Relationship of colour, form and meaning. Exploration in visual abstraction.
- Study of Visual Language – critical study of visual elements, features and principles. Exploration and creation of complex and meta patterns.
- Analysis of Aesthetics – the structure of Appearance. Form in nature, Exploration of visual images with analogies from nature.

Texts/References
- Gail Greet Hannah, Elements of Design, Princeton Architectural Press, 2002
- Hoffman, Armin; Graphic design manual, Principles and Practice. Arthur NiggliPublisher, Multilingual edition, 2004
- Proctor, R. M.; The principles of Form and Design, Wiley Publication, 1993
- Frutiger, Adrian; Signs and Symbols: Their Design and Meaning by, Watson – Guptill Publications, 1998
  Itten, Johannes; The Art of Color: The Subjective Experience and Objective Retionale of color, Wiley Publication, 1997
- Kepes, Gyory; Language of Vision, Dover Publications, 1995
- Elam, Kimberly; Geometry of Design: Studies in Proportion and Composition, Princeton Architectural Press, 2001
- Hall, Edward Twitchell; The Hidden Dimension, Publisher: Anchor; Reissue edition, 1990
- Bachelard, Gaston; Jolas, Maris (Translator); The Poetics of Space, Publisher: Anchor; Reissue edition, 2014.
- Livio, Mario; The Golden Ration: The Story of PHI, the World's Most Astonishing Number, Publisher: Broadway, 2008.

DE 627 Indian thought and tradition

Course Content *(List of the topics/sub-topics to be covered in the lectures/practicals/assignments)*:

This is an exposure course to Indian thought and traditions which will cover various domains like Indian visual art, oral traditions, music, dance, theatre, science, health and architecture and society that make India stand out uniquely as a nation because of its diversity of cultures, languages, religions and customs

Visual Art – Traditional and contemporary schools of Indian Art, folk art

Oral Traditions from the ancient to the present

Music – Classical (Hindustani & Carnatic) Semi- classical, Folk, Fusion

Dance – Classical, Folk, Contemporary

Theatre – Traditional (Natyashastra), Contemporary, Puppet Theatre

Science – An understanding of the scientific approach to everything and the holistic approach to it and how it influenced all aspects like health, architecture, management and even the arts.

Post independence understanding of India as a nation and bridging the wealth of the past with the potential of the future.

Reflection of this exposure to the question – What is or what can be called 'Indian' Design.

Texts/References

- IyerBharatha K., Indian Art- a Short Introduction, Taraporwala 1982.
- Gandhi Indira, Eternal India, BI Publications 1980.
- Boner, Sharma Baumer; Vastusutra Upanishad, MotilalBanarasidas, 1982.

DE 629 Introduction To Photography

Course Content *(List of the topics/sub-topics to be covered in the lectures/ practicals/assignments)*:

Lens, Focal Length, Exposure (Shutter speed, Aperture, ISO), Depth of Field, Histogram, Picture Styles, RAW image, Digital Imaging, Sensor, Crop Factor, Light Metering (Incident, Reflected), Photographic Documentation.

Texts/References

- Andrews, Philip & Langford, Michael, Langford's Starting Photography: The Guide to Creating Great Images, Focal Press, 2008.
- Hirsch, Robert, Light and Lens: Photography in the Digital Age, Taylor & Francis Group, 2012.
- Page, David A. &Zakia, Richard D., Photographic Composition: A Visual Guide, Focal Press, 2011
- Hunter, Fil&Biver, Steven & Fuqua, Paul, Light Science and Magic : An Introduction to photographic Lighting, Focus Press, 2012.
- Zakia, Richard D., Perception and Imaging: Photography—A Way of Seeing, Focal Press, March 2013.
- Berger, John, Ways of Seeing, Penguin, 25 Sep 2008.
- Arnheim, Rudolf, Visual Thinking, University of California Press, April 16, 2004.

DE_631 Introduction to Typography

Course Content*(List of the topics/sub-topicstobecoveredinthelectures/practical's/assignments)***:**

History of Typography, Type Terminology, Font Classification, Anatomy of Typefaces, Introduction to Indic Script Typography, Typesetting, Web Typography.

Texts/References

- Ruegg, Ruedi&Frohlich, Godi : Basic Typography, ABC edition, Zurich,1972.
- Naik, Bapurao; Typography of Devanagari. Directorate of Languages, Bombay, 1971.
- Ruder, Emil; Typography, a manual of Design March 1, 2001.
- Schmid, Helmut: The Road to Basel, 1997.
- Bringhurst, Robert; The elements of typographic Styl. Hartley and Marks15 Jan 2013.
- Elam, Kimberly; Exprssive Typography. The word as image, 1990.
- Bain, E.K; Display Typography, 1970.
- McLean, Ruari; Manual of typography. Thames and Hudson, 1980.
- Lupton, Ellen; Thinking with type : a critical guide for designers, writers, editors, and students, New York : Princeton Architectural Press 2004.
- Schmid, Helmut; The road to Basel, Helmut SchmidDesign, 1997.
- Samara, Timothy; Making and breaking the grid: a graphic design layout workshop. Gloucester : Rockport Pub, 2005.
- Jute, Andre; Grids: the structure of graphic design.Crans-Pres-Celigny: Rotovision, 2002.
- Muller-Brockmann, Josef; Grid systems in graphic design. Arthur Niggli, Netherlands, 2010.

DE 633 Colour, Composition and Layout

Course Content *(List of the topics/sub-topics to be covered in the lectures/practicals/assignments)*:

- Colour Theory, Colour through different mediums, Physical properties of Colour, Colour Schemes, Colour Harmonies, Colour Symbolism.
- Methods of Composition: Realistic, Decorative, Abstract Compositions etc. Principles of Organization & Composition: Repetition, Variety, Contrast, Radiation, Rhythm, Balance, Gradation, Dominance & Subordination, Transition, Harmony, Unity etc.

Texts/References

- Interaction of Color: Revised and Expanded Edition by Josef Albers,28-Jun-2013
- Itten, Johannes; The Art of Color: The Subjective Experience and Objective Rationale of Color, Wiley Publications, 1997.
- Color: A Natural History of the Palette by Victoria Finlay, 2007.
- Edwards, Betty; New Drawing on the Right Side of the Brain, Publisher: Tarcher, 2012.
- Visual Language for Designers: Principles for Creating Graphics that People Understand by Connie Malamed, 2011.
- Universal Principles of Design by William Lidwell, 2010.
- Visual Grammar by Christian Leborg, 2006.
- Design Basics by David A. Lauer, Harcourt College Pub; 4th edition (1994-09-01) (1656)

DE 635 Interface Design

CourseContent*(List ofthe topics/sub-topicstobecoveredinthelectures/practicals/assignments)*:
- Human capabilities (e.g., visual and auditory perception, memory, mental models, and interface metaphors)
- Interface technology (e.g., input and output devices, interaction styles, and common interface paradigms)
- Interface design methods (e.g., user-centered design, prototyping, and design principles and rules), and interface evaluation (e.g., software logging, user observation, benchmarks and experiments)
- Interaction principles, requirements analysis, designing for different screens (web, TVs and mobile devices), design standards, style guides, techniques and visual design principles.

Texts/References

- Cooper, Alan. The Inmates Are Running the Asylum: Why High Tech Products Drive Us Crazy and How To Restore The Sanity. USA: Sams01-Jan-1999.
- Garrett, Jesse James. The Elements of User Experience
- : User Experience: User- Centered Design for the Web. USA: New Riders Press, 2002.
- Heskett, John. Toothpicks and Logos: Design in Everyday Life. UK: Oxford University Press, 2003.
- Krug, Steve. Don't Make Me Think: A Common Sense Approach to Web Usability. USA: Basic Books, 2000.
- Norman, Donald. Emotional Design: Why We Love (Or Hte) Everyday Things. USA: Basic Books, 2003.
- Norman, Donald. Things That Mke Us Smart: Defending Human Attributed in the Age of the Machine, USA: Addison Wesley Publishing Company, 2014.
- Norman, Donald. The Design of Everyday Things. USA: Basic Books, 2013.
- Papanek, Victor. Design for the Real World: Human Ecology and Social Change. USA: Academy Chicago Publishers, 2003.
- Preece, Jennifer et al.. Interaction Design. USA: John Wiley & Sons07-Jun-2011.
- Raskin, Jef. The Humane Interface : New Directions for Designing Interactive Systems. USA: Addison-Wesley Professional, 2000.

DE 637 User studies

Course Content *(List of the topics/sub-topics to be covered in the lectures/practicals/assignments)*:

- Gathering user data through observation and contextual interviews
- Interpreting interviews with team members, creating work models (Flow, sequence, culture, physical, artefact etc.)
- Consolidating data across users with techniques such as affinity diagrams and personas
- Using data in the design process
- Comparison of contextual interview to other techniques such as survey research, focus groups, Rapid Assessment Procedure, task analysis.

Texts/References

- Beebe, James; Rapid Assessment Process; Rowman& Littlefield (2001)
- Beyer, Hugh; Holtzblatt, Karen; Contextual Design: Defining Customer Centered Systems; Morgan Kaufmann (1997)
- Hackos, JoAnn T; Redish, Janice C., User and Task Analysis for Interface Design; Wile (1998).
- Handwerker, W. Penn; Quick Ethnography; Altamira Press (2001)
- Mike Kuniavsky; Observing the User Experience, Morgan Kaufmann (2012)
- Wendell J, Holtzblatt K, Wood S, Rapid Contextual Design, Morgan Kaufmann (2004)

DE 639 Usability Evaluation

Course Content *(List of the topics/sub-topics to be covered in the lectures/practicals/assignments)***:**

- Elements of user experience
- Principles, heuristics, patterns, guidelines and standards of human-computer interaction
- Setting user experience goals for a product
- Heuristic evaluation
- Usability evaluation, think aloud protocol, card sorts and user performance tests
- Recruitment and design of usability tests
- Introduction to quantitative evaluation techniques.

Texts/References

- Jesse James Garrett, The Elements of User Experience, New Riders (2010)
- Dix, Alan J.; Finlay, Janet E.; Abowd, Gregory D.; Beale, Russell; Human-Computer Interaction, Pearson Education; 2008.
- Dumas, Joseph S.; Redish, Janice C.; Practical Guide to Usability Testing; Exeter : Intellect (1999)
- Nielson, Jackob; Usability Engineering; Morgan Kaufmann (2015)
- Mike Kuniavsky; Observing the User Experience, Morgan Kaufmann (2012)
- Tom Tullis, Bill Albert, Measuring the User Experience, Morgan, 2013.

DE 641 Interactions, Media, Senses

Course Content *(List of the topics/sub-topics to be covered in the lectures/practicals/assignments)***:**

- Designing interactions for the Physical, Cognitive and Social environments of the user
- Digital Smart Medias and co-evolution of technology- Understanding design in the context of digital, Smart products with information, databases, connectivity, sensors and multimodal displays.
- Study of how people sense, perceive, understand, use and experience interactive objects and spaces.

Texts/References

- Bonsiepe, Gui; Interface: an approach to design; edited by Dawn Barrett; Maastricht: Jan van Eyck Akademie (1999)
- McKim, Robert; Experiences in Visual Thinking, Publisher: Brooks/Cole Publishing Company, 1980
- Buxton, Bill; Sketching User Experiences: Getting the Design Right and the Right Design (Interactive Technologies), Morgan Kaufmann, 2010
- Ackerman, Diane; A Natural History of the Senses, Vintage, ISBN 0679735666,1990
- Wurman, Richard Saul; Information Architects, Watson-Guptill Publications, 1997
- Cooper, Alan; Reimann, Robert; About Face 2.0 the Essentials of Interaction Design; Wiley (2003)
- Dix, Alan J.; Finlay, Janet E.; Abowd, Gregory D.; Beale, Russell; Human-Computer Interaction, Pearson Education; 2 edition (1998)
- Galitz, Wilbert O.; The Essential Guide to User Interface Design; Wiley; 2 edition (2002)
- Garrett, Jesse James; The Elements of User Experience; New Riders (2010)
- Gershenfeld, Neil; When Things Start to Think; New York: Henry Holt (1999)
- Mandel, Theo; The Elements of User Interface Design; Wiley; (1997)
- Norman, Donald A.; The Design of Everyday Things; Basic Books; 1988 (2013)
- Preece, Jenny; Rogers, Yvonne; Sharp, Helen; Interaction Design: Beyond Human-Computer Interaction; John Wiley & Sons, Inc. (2015)
- Surowiecki, James; The Wisdom of Crowds, Little, Brown (2005)
- Moggridge, Bill; Designing for Interactions, MIT Press, (2007)

DE 663 Sketching 1

Course Content *(List of the topics/sub-topics to be covered in the lectures/practicals/assignments)*:

- Exercises on lines, curves to improve the hand mind coordination.
- 1, 2 and 3 point perspectives. Theory and examples from nature.
- Drawing of objects from outdoor.
- Exercises for improving observation and visual memory.

Texts/References

- Edwards, Betty; New Drawing on the Right Side of the Brain, Publisher: Tarcher; 2002
- Powell, Dick; Design Rendering Techniques: A Guide to Drawing and Presenting Design Ideas, Publisher: North Light Books, 1996
- Caplin, Steve; Banks, Adam; The Complete Guide to Digital Illustration, Publisher: Watson - Guptill Publications, 2003.
- Demers, Owen; Digital Texturing &Paintin, Publisher: New Riders Press; Bk & CD-Rom edition 2001.
- Pogany, Willy; The Art of Drawing, Publisher: Madison Books, 1996
- McKim, Ribert; Experiences in Visual Thinking, Publisher: Brooks/ Cole Publishing Company, 1980.

2nd Semester

DE 612 Design Issues

Course Content *(List of the topics/sub-topics to be covered in the lectures/practicals/assignments)*:

This course will contain two predominant approaches. The first is reflective which will help students to ponder on the very basic yet subjective questions like what makes a good designer.

- It will address understanding perceptions & Paradigms which enable students to "think outside the box" by identifying the boxes one creates inadvertently while designing.
- It will deal with the tangible and intangible relevance of broadening one's perspectives in Arts Aesthetics, Science and Technology to design.
  The second is an exposure to different thoughts and perspectives, concerns and issues in the context of design.
- The challenges in design, layers or user experience, design process
- Design for the real world
- It will also expose the students to emerging areas of design,
- Relevance of design in the context of India,
- Importance of sustainable design practices, preserving traditional practices & designing fo the underserved communities.
- Lastly it will provide an exposure to the design process.

Texts/References

- Covey, S. The Seven Habits of Highly Effective People. Free Press; 1st edition (September 15, 1990)
- Athvankar, Uday, Mental Imagery as a Design Tool, Cybernetics and Systems, Vol 28, No 1, Jan-Feb, l997, pp 25-42.
- Athvankar, Uday, Learning from the way Designers Model Shapes in their Mind, Cognitive Systems : from Intelligent Systems to Artificial life, ed. J.R. Issac and V. Jindal, Tata McGraw-Hill, New Delhi, 1997, pp 221-232.
- Poovaiah, Ravi and Sen, Ajanta. Design by People within Culturally-rooted Idioms – the new 'cool' in a globalised world: - paper at ICSID Educational Conference at Copenhagen, Sept. 2005
- Christopher Jones, Design Methods Seeds of Human Future, Wiley, Interscience (1970)
- Jesse James Garrett, The Elements of User Experience, New Riders (2003)
- Hugh Beyer and Karen Holtzblatt, Contextual Design, Morgan Kaufmann (1998)
- Victor Papanek, Design for the real world, 2nd edition, Academy Chicago Publishers; 2nd edition (15 July 1985)
- Donald Schön, The Reflective Practitioner: How Professionals Think In
- Action, Basic Books (2 September 1984)

DE 614 Design Workshop

CourseContent*(List ofthe topics/sub-topicstobecoveredinthelectures/practical's/assignments)***:**

- An independent on week workshop which involves working on actual design problems with practicing professionals. Study of various techniques used in Design execution like Calligraphy, Pottery and Ceramics, Printmaking, Theatre, Film and Video, Performing Arts Sculpture, Painting, Story Telling and Narrative, Toy Design, Book Design, Sound Design, Exhibition Design, Information Graphics and Way finding, Environment etc.

Texts/References

NONE

DE 618 Semantics and Communication Theory

Course Content *(List of the topics/sub-topics to be covered in the lectures/practicals/assignments)*:

- The course explores relationship between human information processing and design of messages
- Introduction to the, working memory (STM & LTM), chunking theory and their implications on human information processing. Human information processing strategies with emphasis on processing of visual information. Introduction to visual perception and Gestalt laws of organization. Introduction to information theory and their application to
spatial and spatio – temporal message design.
- Concept of attention in perception. Relationship between message design and attention, Exploring relationships between the semantics and the structure of messages.
- Course is supported by studio work which uses these theories in design of communication messges.

Texts/References

- Miller, G; The magical number seven, plus or minus two: some limits on our capacity for processing information, in "Readings-'in perceptions", ed. Wetheimer M., Van Nostrand, New York, 1966 pp. 90-114.(1994)
- Mole, A; Information theory and aesthetic perception, University of Illinois press, Urban, Aug. 1966
- Wertheimer, M; Principles of perceptual organization. In "Readings in perception" ed. D. Beardslee and M. Wertheimer, Van Nostrand, 1966, PP 115-135
- Arthur T. Turnbull, Russell N. Baird; Graphics of communication - Typography, Layout, Design, Holt, Rinehart and Winston, 1987
- Willows, D M, Houghton, H A; The Psychology of Illustration, Vol.1 & 2, Springer-Verlag, New york, 1989, (2012)
- Lee Lefever; The art of explanation, Wiley, USA, 2012
- William Lidwell, Kritina Holden, Jill Butler; Universal principles of Design, Rockport, USA, 2010

DE 620 Introduction to 3D Form

Course Content*(List ofthe topics/sub-topicstobecoveredinthelectures/practicals/assignments)***:**
- Introduction to 2 dimensional and 3 dimensional form.
- Exploration of Product form and Product interface
- Exploration various interactive technologies and their influence in product interaction and product form.
- Use of metaphors to generate new forms. Concept of family of forms.
- Introduction to 3D geometry and CADD software. Basic 3D Forms: cube, tetrahedron, octahedron etc. and their imaginative use in generating complex forms and structures.
- Use of combinatrics as a method of 3Dform generation.
- Form, material and process relationship.

Texts/References
- Itten, Johannes; The Art of Color: The Subjective Experience and Objective Rationale of Color, Wiley Publications,1997
- Hannah, Gail Greet; Elements of Design, Princeton Architectural Press, 2013
- Byers, Mel; The Design Encyclopedia, Publisher: John Wiley & Sons Publications, 1994.
- Livio, Mario; The Golden Ratio: The Story of PHI, the World's Most Astonishing Number, Publisher: Broadway, 2008.
- Dourish, P. (2004). Where The Action Is: The Foundation of Embodied Interaction. Cambridge, MA: MIT Press.Ehn P (1989) Work-oriented design of computer artifacts. Arbetslivscentrum, Stockholm.
- Kaptelinin, V., Nardi, B.A.Acting with technology activity theory and interaction design, MIT Press, Cambridge, Mass., 2009.
- Löwgren, J. and Stolterman, E. Thoughtful interaction design : a design perspective on information technology. MIT Press, Cambridge, Mass., 2 Mar 2007.
- McCarthy, J. and Wright, P. Technology as experience. MIT Press, Cambridge, Mass., 14 Sep 2007.
- Norman, D.A. The psychology of everyday things. Basic Books, New York, 2013.
- Reckwitz, A. (2002b). Toward a Theory of Social Practices : A Development in Culturalist Theorizing. European Journal of Social Theory. 5(2), 243-263.
- Schon, D.A. The Reflective Practitioner: How Professionals Think in Action. New York: Basic Books, 2008.
- Shove, E., Watson, M., Hand, M., and Ingram. J. (2007)
- The Design of Everyday Life. Berg Publishers, 2007.
  Suchman, L.A. Plans and situated actions: The problem of human-machine, 1987.communication. Cambridge University Press, Cambridge Cambridgeshire; New York, 1987

DE 622 Introduction to Animation

CourseContent *(List ofthe topics/sub-topicstobecoveredinthelectures/practicals/assignments)*:

- Introduction to animation, processes, techniques & Styles.
- Applications of animation – Data Visualisation, Gaming, Information graphics, Motion graphics.
- Hands on exposure through assignments.

Texts/References

- Laybourne, Kit. The Animation Book, Three Rivers Press, 1998.
- Danielson, Richard Karl, Flash Animation and Dhtml, Rockport Publishers Inc, 2000.

DE 624 Introduction To Filmmaking

Course Content *(List ofthe topics/sub-topicstobecoveredinthelectures/practicals/assignments)*:

Pre-production, Developing Story, Script Writing, Story Board, Production, Camera, Shooting Strategies, Camera Movements, Steadicam, Sound Recording, Post Production, Editing, Sound Design, Color Correction, Transcoding.

Texts/References

- Ascher, Steven &Pincus, Edward, The Filmmaker's Handbook: A

Comprehensive Guide for the Digital Age, Plume; 4 Rev Upd edition (27 Nov.

2012)

- Ray, Satyajit, Our Films, Their Films, Sangam Books Ltd (1 Jan. 2001)
- Rodriguez , Robert, Rebel without a Crew, Plume Books Sep - 1996 (1709)
- Katz, Steve, Film Directing Shot by Shot: Visualizing from Concept to
- Screen, Michael Wiese Productions; 1 edition (6 April 2011)
- Murch, Walter, In the Blink of an Eye, Silman-James Press,U.S.; New
- edition edition (1 September 2001)
- Mascelli, Joseph V., The Five C's of Cinematography: Motion Picture
- Filming Techniques, Silman-James Press,U.S. (1 October 1998)
- Andersson, Barry, Geyen, Janie L., The DSLR Filmmaker's Handbook,
- John Wiley & Sons, Inc., 2012
- Kolker, Robert, Film, Form, and Culture, McGraw-Hill Inc.,US (1
   September 2001)

DE 626 Human factors in interaction Design

Course Content *(List of the topics/sub-topics to be covered in the lectures/practicals/assignments)***:**

- Introduction to Ergonomics / human factors
- The concept of Systems Design. How to look at the design issues
- Use of Anthropometry in design
- The Neural systems
- Sensation and perception
- Cognitive psychology
- Human information processing and execution
- Hick's law, Fitts's Law, Miller number
- Different types of Controls & Displays and it organization.
- Final design Assignment

Texts/References

- Lawrence Erlbaum Associated (2003)
- Sanders, Mark S; McCormick, Ernest J' Human factors in engineering and design, McGraw Hill (1983)
- Zunse, Leonard; Visual perception of form; Academic Press (1990)
- Ratner, Julie (ed); Human factors and web development; 2002.
- Journal of Human Computer Interaction.

DE 628 Interaction Design

Course Content *(List of the topics/sub-topics to be covered in the lectures/practicals/assignments)***:**

- Design process and methodology for designing solutions for interactive products, services and events: Design of integrated systems, products for future use, products to be used in groups, devices used in public places, design of tangible, gestural and expressive interfaces, products that enrich user experience
- The course takes an inter-disciplinary approach drawing upon product design, visual communication, information architecture, cognitive psychology and computer science. The course involves exploration of alternative, pushing the envelope of what is known.
- The focus is on working collaboratively in groups to solve design problems. The course will involve doing projects. Students need to build soft prototypes of proposed systems at the end of the course.
- The course involves learning to critically analyze thoughts and conduct independent Research, to be able to work in teams and collaborate to solve problems, to build confidence in being creative and innovative and be able to think critically.
- The course also introduces best practice of documentation and presentation – both oral and written.

Texts/References

- De Bono, Edward; Lateral Thinking, A Textbook of Creativity; Penguin Books (2009)
- Laurel, Brenda; Computer as Theatre; Addison-Wesley Pub CO (2013)
- Mayhew, Deborah J; The Usability Engineering Lifecycle : A Practitioner's Handbook for user Interface Design; Morgan Kaufmann (1999)
- Norman, Donald A; Invisible Computer: Why Good Products Can Fail, the Personal Computer Is so Complex and Information Appliances Are the Solution; MIT Press (1999)
- Raskin, Jef; The Humane Interface: New Directions for Designing Interactive Systems' Pearson Education (2000)
- Rosenfeld, Louis: Morville, Peter; Information Architecture for the World Wide Web: Designing Large-Scale Web Sites; O'Reilly & Associate; 2nd edition (27 Nov, 2006)
- Tufte, Edward; Envisioning Information; Graphics Press (2003)
- Myerson, Jeremy; IDEO: Masters of Innovation, Publisher : teNeues Publishing Company,29 May, 2001
- Fay Sweet, Frog: Form Follows Emotion, Cutting Edge,10 May, 1999.

DE 630 Trends in Interactive Technologies

Course Content *(List of the topics/sub-topics to be covered in the lectures/practicals/assignments)***:**

- History of technology development, influences on society and design
- Information and communication technology, past, present and future
- Influences from other media
- New trends in interaction design hardware and software
- Interaction design in the context of India
- Design for future needs.

Texts/References

- Moore, Geoffrey A.; Crossing the Chasm; HarperBusiness; Revised edition (2002)
- Lewis, Michael; The New New Thing: A Silicon Valley Story; Penguin Books (2001)
- Sculley, John; Byrne, John A.; Odyssey: Pepsi to Apple... a Journey of Adventure, Ideas and the Future; Harpercollins; Reprint edition (1988)
- Bijapurkar, Rama, We Are Like That Only, Penguin Books (2007)
- Prahlad, CK, The Fortune at the Bottom of the Pyramid, Wharton (2006)
- Yunus, Muhammad, Building Social Business, Public Affairs (2010)

3rd Semester

DE 703 Arts Design and Society 1

Course Content *(List of the topics/sub-topics to be covered in the lectures/practicals/assignments)***:**

- Analysis of history of Art. Traditional Arts. Modernity and Post-Modernity.
- Analysis of history of Design. Bauhaus, Ulm.
- Analysis of history of Design in India. Analysis of design in the context of India.
- Cultural studies. Discourse analysis.
- An Introduction to Theatre.
- An introduction to Documentary Films.
- Critical writing in Art, Design, Theatre and Film.
- An Introduction to Humanities and Social Sciences.
- Qualitative methods- ethnographic, historical, philosophical, case study, and interview.

Texts/References

- Mario, Bussagli; Sivaramamurti, C.; 5000 Years of Art in India, L.N.Abrams, NY, 1971
- Ananda, Coomaraswamy; The Dance Of Siva, Kessinger Publishing, ISBN-13: 978-1428680302, 2006
- Eames, Charles and Ray; The India Report, NID, 1958
- Hylland, Eriksen Thomas; Small Places, Large Issues - Second Edition: An Introduction to Social and Cultural Anthropology (Anthropology, Culture and Society), Pluto Press; 2001
- Neil, Gershenfield; When Things Start to Think, Hodder and Stoughton, London, 15 Feb, 2000.
- Gropius, Walter (Author); Pick, Frank (Introduction); Shand, P. Morton; The New Architecture and The Bauhaus, The MIT Press 1965
- Morris, William (Author); Kelvin, Norman (Editor); William Morris; on Art and Socialism, Dover Publications (August 9, 1999) ISBN-13: 978-0486409047
- Papanek, Victor; Design for the Real World, Thames and Hudson, London, 1995
- Meggs, Philip; A History of Graphic Design, John Wiley & Sons, 1998
- Trivedi, Kirti (ed.); Indian Symbology, IDC, 1987
- Raizman, David; History of Modern Design, Publisher: Prentice Hall, 2004
- Spitz, Rene; The Ulm School of Design: A View Behind the Foreground, Publisher: Edition Axel Menges, 9 Aug. 2010.
- Lupton, Ellen; Miller, J. Abbott (Editor); The ABC's of Bauhaus, The Bauhaus and Design Theory, Publisher: Princeton Architectural Press, 2000

DE 705 Interactive Data Visualization

CourseContent*(List of the topics/sub-topics to be covered in the lectures/practicals/assignments)*:

- Information visualization overview, historical perspective
- Vision, perception and cognition principles of information visualisation
- Data principles, models, dimensions and analysis
- Information taxonomy
- Visual encoding of data
- Mapping, cartography, geo-visualization
- Visualization tools and strategis
- Data stories and presentation

Texts/References

- Bertin, Jacques. Seminology of Graphics: Diagrams, Networks, Maps. Esri Press, 2011.
- Cairo, Alberto. The Functional Art. New Riders, 2013.
- Few, Stephen. Show Me the Numbers: Designing Tables and Graphs to Enlighten. Analytics Press, 2012.
- Fry, Ben. Visualizing Data: Exploring and Explaining Data with the Processing Environment. O'Reilly Media, 2012.
- Harmon, Katherine. You Are Here. Princeton Architectural Press, 2004.
- Harris, Robert L.. Information Graphics: A Comprehensive Illustrated Reference. Oxford University Press, 2000.
- Helfand, Jessica. Reinventing the Wheel. Princeton Architectural Press, 2006
- Holmes, Nigel. Designer's Guide to Creating Charts and Diagrams. Watson-Guptill, 1991.
- Holmes, Nigel. Wordless Diagrams. Bloomsbury, 2005.
- Institute for Information Design Japan. Information Design Source Book. Graphics-Sha, 2005.
- Jacobson, Robert. Information Design. The MIT Press, 2000.
- McCloud, Scott. Understanding Comics Understanding Comics. Harper. Harper, 1994.
- Mijksenaar, Paul and Westendrop, Piet. Open Here: The Art of Instructional Design, 1999.
- Mijksenaar, Paul. Visual Function: An Introduction to Informaton Design. Princton Architectural Press, 1997.
- Myer, Eric. K. Designing Infographics. Hayden Books, 1997.
- Tufte, Edward. Envisioning Information. Graphics Press, 1990 (2003).
- Tufte, Edward. Visual Explanations: Images and Quantities, Evidence and Narrative. Graphics Press, 1997.
- Tufte, Edward. The Visual Display of Quantitative Information. Graphics Press, 2001.
- Ware, Colin. Information Visualization, Third Edition: Perception for Design. Morgan Kaufmann, 2012.
- Yau, Nathan. Visualize This: The Flowing Data Guide to Design , Visualization, and Statistics, Wiley, 2011.
- Yau, Nathan. Data Points: Visualization That Means Something. Wiley, 2013.

DE 707 Design Research Methodologies

CourseContent*(List ofthe topics/sub-topicstobecoveredinthelectures/practicals/assignments)***:**

This course offers an introduction to research methods used in the design process for post-graduate students of all branched of design. Topics which will be covered include: Introduction to qualitative research methods used in design, Introduction to quantitative methods, exploratory, inferential and casual research, Research Design and Introduction to Reading research and Reporting research.

Texts/References

- Doing Research in Design by Christopher Crouch, Bloomsbury Academic (May 8, 2012)
- Visual Research: An Introduction to Research Methodologies in Graphic Design by Ian Noble, AVA Publishing; 2nd edition (November 1, 2011)
- A Designer's Research Manual by Jennifer Visocky O'Grady, Kenneth Visocky O'Grady, Rockport Publishers (October 1, 2006)
- The Handbook of Qualitative Research by Norman K. Denzin and Yvonna S. Lincoln, 1994.
- Research Design: Qualitative, Quantitative, and Mixed Methods Approaches by John W. Creswell 2008.
- The Craft of Research by Wayne C. Booth, 2008.
- Practical Research: Planning and Design by Paul D. Leedy, 1980, January 3, 2015
- Introduction to the Practice of Statistics by David S. Moore, 2012.

DEP 701 M.Des Project 1

Course Content *(List of the topics/sub-topics to be covered in the lectures/practicals/assignments)***:**

The summer internship provides an opportunity for you to work in rural or urban scenarios, based on your preferences and it hopes let you explore the impact design can have on our society, given the backdrop
of socio-economic and cultural context of our country.

The duration of the project is four weeks.

All the students will have to make a presentation after they have completed their internships.

Texts /References
As per project choices.

DEP 703 M.Des Project 2

Course Content *(List of the topics/sub-topics to be covered in the lectures/practicals/assignments)*:

The communication design projects are chosen in areas that include film and video, typography, information design, graphic design, illustrated books and book design, animation and interaction design. This is the equivalent of the final dissertation project leading to the degree of M.Des in Communication Design.

- Duration: 4 months from July– Nov.
- This project will be an extension of the project III and should include development of the final design concept. The defence presentations will be held during the month of April and time given till the end of June to complete the jury feedback, final drawings and finer detailing of the project.
- The evaluation of the Stage 2 of Project III is done by a panel of examiners appointed by DPGC. The panel will consist of external jury member along with an internal examiner, the guide and the chairman (A Professor or an Associate Professor from another Department of IIT Bombay)

Texts /References
As per project choices.

4th Semester

DE 702 Arts Design and Society 2

Course Content *(List ofthe topics/sub-topicstobecoveredinthelectures/practicals/assignments)*:

- Key issues in visual arts (painting and installation art, photography, films), performing Arts public art.
- Concepts and concerns, and discourse on contemporary arts practice.
- The course involves talks by visiting artists, writers, film-makers, theatre artists as well as site visits to organizations and institutions that support arts-based activities and education.

Texts/References

- Huddleston, Edgerton Susan; Translating the Curriculum: Multiculturalism into Cultural Studies, Routledge, 1997 ISBN-13: 978-0415914017 (2014)
- Norm, Fairclough; Analysing Discourse: Textual Analysis for Social Research, Routledge; 2003. ISBN-10: 0415258936
- Pal, Pratapaditya (ed.): Reflections on the Arts in India, Marg, 2000
- Subramanyan K. G.; Moving Focus: Essays on Indian Art, Seagull Books, Kolkata, 2006 ISBN Number : 81 7046 199 5
- Subramanyan K.G.; The Living Tradition,
  Seagull, 1987 ISBN Number: 8170460220
- Friedman, Thomas L.; The World Is Flat: A Brief History of the Twenty-first Century, Publisher: Farrar, Straus and Giroux, 7 Aug, 2007.

DEP 702 M.Des Project 3

Course Content *(List of the topics/sub-topics to be covered in the lectures/practicals/assignments)*:

The communication design projects are chosen in areas that include film and video, typography, information design, graphic design, illustrated books and book design, animation and interaction design. This is the equivalent of the final dissertation project leading to the degree of M.Des in Communication Design.

- Duration: 5 months from December – May.
- This project could be an extension of the previous project (if the scope of the project justifies the extension) or it could be an independent project with one of the following focus:
- Design project of student interest and / or faculty interest and / or industry project
- Re-design project that relooks at an existing problem or situation
- Research project, delving into methodological or pedagogic issues
- Exploration project, exploring application possibilities in a new technology or medium or variations
- The evaluation of the Stage 1 of Project III is done internally with a panel appointed by the DPGC in consultation with the guide. The panel will consist of the guide and two other faculty members.

Texts /References
As per project choices.