

**Bachelor of Science (Transportation Design)**

**Programme Outcomes (POs)**

- PO01. Sketch 3 Dimensional objects (in 2D format, digital and Analogue).
- PO02. Communicate Ideas using Analog and Digital Media in 2D and 3D.
- PO03. Apply their understanding of Industrial Processes and Materials into their projects.  
Assess projects according to their constraints to use varied industrial processes and materials.
- PO04. Create innovative ways of manufacturing objects and systems.
- PO05. Refer to the global context to Argue, Discuss and Articulate new ideas and/or notions.
- PO06. Use historical, social, political, and cultural contexts to understand real life problems.
- PO07. Understand abstract concepts to evolve thinking in different fields such as politics, economics, and sociology and apply them to projects.
- PO08. Analyse international socio-economical context.  
Analyse globally acceptable and relevant socio-economic contexts that that will receive/integrate the design projects.
- PO09. Apply all the relevant stages of the complete design process in projects.
- PO10. Create, without bias, different solutions that will be selected by relevant project related criteria.
- PO11. Adept at professional practices and conduct engagement with the industry.  
Use professional practices and conduct while engaging with the industry.
- PO12. Evaluate their skills and talent related to their professional aims and goals

**Programme Specific Outcomes (PSOs)**

- PSO1. Develop an in depth understanding of most of the current and upcoming materials and related industrial processes
- PSO2. Develop a cradle to cradle product life cycle including cost and economies of scale, logistic systems and sustainability

**Course Outcomes (COs)**

**2019-20 Batch**

<b>Semester</b>	<b>Course Code</b>	<b>Course Name</b>	<b>Course Outcomes (COs)</b>
<b>I</b>	<b>21ENG1L02</b>	<b>ENGLISH 1</b>	CO01. Apply the design process in detail to a real-world brief for simple product design briefs CO02. Apply design thinking and user-centered design and analyze the user scenarios in detail CO03. Create new relevant product design solutions for the design problem CO04. Evaluate different design proposals and be able to select a relevant one CO05. Communicate the design solutions in detail effectively
	<b>21ENG1L02</b>	<b>PERSPECTIVE</b>	CO01. Understanding fundamentals of perspective CO02. Apply perspective rules to build simple objects CO03. Construct and represent a complex volume using drawing methods. CO04. Understand and apply camera angles CO05. Follow and implement drawing construction techniques
	<b>21BSD1C05</b>	<b>SCULPTURE</b>	CO01. Understand orthographic views and basic sculpture techniques CO02. Understand the properties and constraints of basic sculpture materials like clay, paper, and wire. CO03. Apply the material understanding to create simple models with artistic expression CO04. Remember the history of sculpture
	<b>21BSD1C08</b>	<b>CREATIVE WRITING CULTURE KIT I</b>	CO01. Analyze the world in terms of various constant and variable parameters. CO02. Understand and create a simple model of the world, either at macro or micro scale through tools like day in the life CO03. Understand basic storytelling concepts CO04. Understand and remember creative techniques to think out of the box and imagine new scenarios. CO05. Create new futuristic constructs by extrapolating current parameters and stories based on the same

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	21BSDD01	ART HISTORY I	CO01. Understand and remember the historical chronology and details of the art periods CO02. Analyse the links between the art works and the culture CO03. Understand fundamentals of colour theory and colour application CO04. Apply colour schemes and pallets to simple applications
	21BSDD02	SCIENCE I	CO01. Understand and remember the basic principles of strength and rigidity. CO02. Understand the basic principles of thermodynamics and flow. CO03. Understand basic scientific principles of motion CO04. Understand basic principles and application of biomimicry.
II	21BSD1D06	MATERIAL & PROCESS	CO01. Understand and remember the properties and applications of materials CO02. Analyze the application of specific materials to the functions needed. CO03. Understand and analyse the link between the materials and manufacturing processes. CO04. Understand new manufacturing principles like 3D printing, distributed manufacturing and others. CO05. Apply the material understanding in a creative solution.
	21BSD2C03	PERSPECTIVE II	CO01. Understand construction techniques for drawing products CO02. Understand sections and volumes for simple objects CO03. Apply the construction processes and build volumes on paper using sections. CO04. Understand exploded views and technical drawings CO05. Apply this understanding to create views of existing products

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	21BSD2C04	<b>GRAPHIC KIT – II</b>	<p>CO01. Understanding and appreciation of grey values, colours, colour pallets using various artworks</p> <p>CO02. Understand the basics of light and shadow to create an illusion of depth and apply it to simple shapes</p> <p>CO03. Understand the basics of human anatomy and be able to sketch the same</p> <p>CO04. Understand basic principles and elements of graphic design</p> <p>CO05. Apply these principles to create graphic compositions</p>
	21BSD2C05	<b>SCULPTURE – II</b>	<p>CO01. Understanding and appreciation of grey values, colours, colour pallets using various artworks</p> <p>CO02. Understand the basics of light and shadow to create an illusion of depth and apply it to simple shapes</p> <p>CO03. Understand the basics of human anatomy and be able to sketch the same</p> <p>CO04. Understand basic principles and elements of graphic design</p> <p>CO05. Apply these principles to create graphic compositions</p>
	21BSD2C08	<b>DISCOVERY AND INITIATION – I</b>	<p>CO01. Understand how to analyze a brief in the Space and Product stream</p> <p>CO02. Understand the specificities of the Space and Product stream</p> <p>CO03. Create new, creative solutions for the respective streams</p> <p>CO04. Communicate these solutions clearly and effectively</p>
	21BSD2C09	<b>DISCOVERY AND INITIATION – II</b>	<p>CO01. Understand how to analyse a brief in the Space and Product stream</p> <p>CO02. Understand the specificities of the Space and Product stream</p> <p>CO03. Create new, creative solutions for the respective streams</p> <p>CO04. Communicate these solutions clearly and effectively</p>

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	21BSDG03	TYPOGRAPHY I	<p>CO01. Understand the basic rules of typography, including grids, layouts, information hierarchy.</p> <p>CO02. Understand constraints and process of print and publication</p> <p>CO03. Apply the basic principles to create expressive typographic artwork</p> <p>CO04. Create new compositions for communicating the work in a portfolio format</p>
	21BSDG04	CALLIGRAPHY I	<p>CO01. Understand intermediate calligraphy tools and their use cases</p> <p>CO02. Understand and apply the process of abstraction</p> <p>CO03. Create 2D shapes and forms to express various emotions</p>
	21PC2ED8	FIVDE– II	<p>CO01. Understand how to analyse a brief in the Identity, Interaction and Transport streams.</p> <p>CO02. Understand the specificities of the streams Identity, Interaction and Transport streams.</p> <p>CO03. Create new, creative solutions for the respective streams</p> <p>CO04. Communicate these solutions clearly and effectively</p>
III	21BSD3C01	GRAPHIC KIT III	<p>CO01. Understand the visual hierarchy and layering of information</p> <p>CO02. Understand and apply the sketching principles to create effective communicative sketches</p> <p>CO03. Understand and apply the use of light and shadow to create the efficient illusion of 3D</p> <p>CO04. Understand and apply markers to represent forms, textures, and materials effectively.</p> <p>CO05. Understand and apply marker techniques of creating photo-realistic renderings on paper.</p>

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	21BSD3C031	2D AND 3D – I	<p>CO01. Understand and remember the concepts of digital 2D images, including pixels, resolution, vector/raster images.</p> <p>CO02. Understand raster creation and manipulation, and apply raster tools like image adjustments, brush strokes, gradients and fills to create photorealistic artwork and images in Adobe Photoshop.</p> <p>CO03. Understand vector creation and manipulation and apply vector tools to create scalable assets like icons and symbols in Adobe Illustrator.</p> <p>CO04. Understand and remember the concepts of digital 2D images, including pixels, resolution, vector/raster images.</p>
	21BSD3C031	2D AND 3D – I LAB	<p>CO01. Understand and remember the concepts of digital 2D images, including pixels, resolution, vector / raster images. Understand the</p> <p>CO02. Understand raster creation and manipulation, and apply raster tools like image adjustments, brush strokes, gradients and fills to create photorealistic artwork and images in Adobe Photoshop.</p> <p>CO03. Understand vector creation and manipulation, and apply vector tools to create scalable assets like icons and symbols in Adobe Illustrator.</p> <p>CO04. Understand and remember the concepts of digital 2D images, including pixels, resolution, vector / raster images. Understand the olve real-life projects/challenges with confidence.</p>
	21BSD3C04	Material and Process II	<p>CO01. Understand and remember properties and applications of materials</p> <p>CO02. Analyse the application of specific materials to the functions needed.</p> <p>CO03. Understand and analyse the link between the materials and manufacturing processes.</p> <p>CO04. Understand new manufacturing principles like 3D printing, distributed manufacturing and others.</p> <p>CO05. Apply the material understanding in a creative solution.</p>

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	21BSD3C05	<b>MODELS AND PROTOTYPES I</b>	CO01. Understand and remember basic safety protocols when handling workshop equipment CO02. Understand the technical aspects and use cases for workshop machines like Lathe, drills, Laser cut, etc) CO03. Understand the process of analyzing and documenting simple objects through technical drawings. CO04. Understand the properties and constraints of working with foam, and create primitives like cubes, cylinders, and cones. CO05. Apply the process of model-making using templates, matching the views, deductive modeling, and filleting to produce visually accurate replications of existing objects in foam.
	21BSDG031	<b>ETHNOGRAPHY- SOCIOLOGY I</b>	CO01. Understand and remember the basic principles and concepts of ethnography. CO02. Understand the need for qualitative research. CO03. Apply the ethnography process to a simple scenario and develop a user study document CO04. Analyses the research findings and collates them into actionable insights, and showcases this in research finding in the document.
	21BSDG041	<b>MARKETING I</b>	CO01. Understand and remember the marketing basic principles and concepts CO02. Explore the variety of tools like Questionnaires, interviews and others. CO03. Understand and explore the market segmentation, through case studies CO04. Understand different marketing strategies for brands, launch strategies, and marketing plans CO05. Apply the marketing principles to a small project in class, and present a marketing plan for a fictitious brand.
	21BSDG052	<b>CALLIGRAPHY II</b>	CO01. Understand intermediate calligraphy tools and their use cases CO02. Understand and apply the process of abstraction CO03. Create 2D shapes and forms to express various emotions

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IV	21BSD3S311	FRENCH I	CO01. Understand and remember the basic pronunciation CO02. Understand and remember the basic grammar CO03. Understand and apply basic sentence construction CO04. Understand and remember introductory Spanish culture
	21BSD3S411	Major Selection project - II	CO01. Understand the specific requirements of projects in Transportation and Interaction fields CO02. Apply design thinking and user centered design and analyse the user scenarios in detail CO03. Create new relevant product design solutions for the design problem CO04. Evaluate different design proposals and be able to select a relevant one CO05. Communicate the design solutions in detail effectively
	21BSD3S421	Major Industry project - II	CO01. Apply the design process in detail to a real-world brief CO02. Apply critical thinking and analyse the problem scenarios CO03. Create new relevant design solutions which cover aspects of cost, feasibility and social impact for the design problem CO04. Evaluate different design proposals and be able to select a relevant one CO05. Communicate the design solutions in detail effectively
V	18BSD5C01	MASTERCLASSES - I	CO01. Develop a critical spirit to nurture their creations CO02. Understand the link between materials and design, along with its application CO03. Understand and analyse and apply notions of ergonomics, geometry and aesthetics for a particular product. CO04. Learn how to identify cultural differences and connections



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	18BSD5C02	<b>MASTERCLASSES - II</b>	<p>CO01. Develop a critical spirit to nurture their creations</p> <p>CO02. Understand the link between materials and design, along with its application</p> <p>CO03. Understand and analyse and apply notions of ergonomics, geometry and aesthetics for a particular product.</p> <p>CO04. Learn how to identify cultural differences and connections</p>
	18BSD5C03	<b>CREATIVITY - METHODS</b>	<p>CO01. Develop a critical spirit to nurture their creations</p> <p>CO02. Understand the link between materials and design, along with its application</p> <p>CO03. Understand and analyse and apply notions of ergonomics, geometry and aesthetics for a particular product.</p> <p>CO04. Learn how to identify cultural differences and connections</p>
	18BSD5C04	<b>2D DIGITAL DRAWING</b>	<p>CO01. Develop a critical spirit to nurture their creations</p> <p>CO02. Understand the link between materials and design, along with its application</p> <p>CO03. Understand and analyse and apply notions of ergonomics, geometry and aesthetics for a particular product.</p> <p>CO04. Learn how to identify cultural differences and connections</p>
	18BSD5C05	<b>3D ADVANCED</b>	<p>CO01. Develop a critical spirit to nurture their creations</p> <p>CO02. Understand the link between materials and design, along with its application</p> <p>CO03. Understand and analyse and apply notions of ergonomics, geometry and aesthetics for a particular product.</p> <p>CO04. Learn how to identify cultural differences and connections</p>

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	18BSD5C06	<b>MATERIALS AND WORKSHOP</b>	<p>CO01. Develop a critical spirit to nurture their creations</p> <p>CO02. Understand the link between materials and design, along with its application</p> <p>CO03. Understand and analyse and apply notions of ergonomics, geometry and aesthetics for a particular product.</p> <p>CO04. Learn how to identify cultural differences and connections</p>
	18BSD5C07	<b>INDUSTRIAL PROJECTS - I</b>	<p>CO01. Develop a critical spirit to nurture their creations</p> <p>CO02. Understand the link between materials and design, along with its application</p> <p>CO03. Understand and analyse and apply notions of ergonomics, geometry and aesthetics for a particular product.</p> <p>CO04. Learn how to identify cultural differences and connections</p>
	18BSDG035	<b>ETHNOGRAPHY- SOCIOLOGY – II</b>	<p>CO01. Develop a critical spirit to nurture their creations</p> <p>CO02. Understand the link between materials and design, along with its application</p> <p>CO03. Understand and analyse and apply notions of ergonomics, geometry and aesthetics for a particular product.</p> <p>CO04. Learn how to identify cultural differences and connections</p>
	16CENG0A1	<b>COMMUNICATIVE ENGLISH</b>	<p>CO01. Develop a critical spirit to nurture their creations</p> <p>CO02. Understand the link between materials and design, along with its application</p> <p>CO03. Understand and analyse and apply notions of ergonomics, geometry and aesthetics for a particular product.</p> <p>CO04. Learn how to identify cultural differences and connections</p>

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VI	18BSD6C01	<b>INTERNSHIP</b>	<p>CO01. Develop a critical spirit to nurture their creations</p> <p>CO02. Understand the link between materials and design, along with its application</p> <p>CO03. Understand and analyse and apply notions of ergonomics, geometry and aesthetics for a particular product.</p> <p>CO04. Learn how to identify cultural differences and connections</p>
	18BSD6C02	<b>INDUSTRIAL PROJECTS – II</b>	<p>CO01. Develop a critical spirit to nurture their creations</p> <p>CO02. Understand the link between materials and design, along with its application</p> <p>CO03. Understand and analyse and apply notions of ergonomics, geometry and aesthetics for a particular product.</p> <p>CO04. Learn how to identify cultural differences and connections</p>