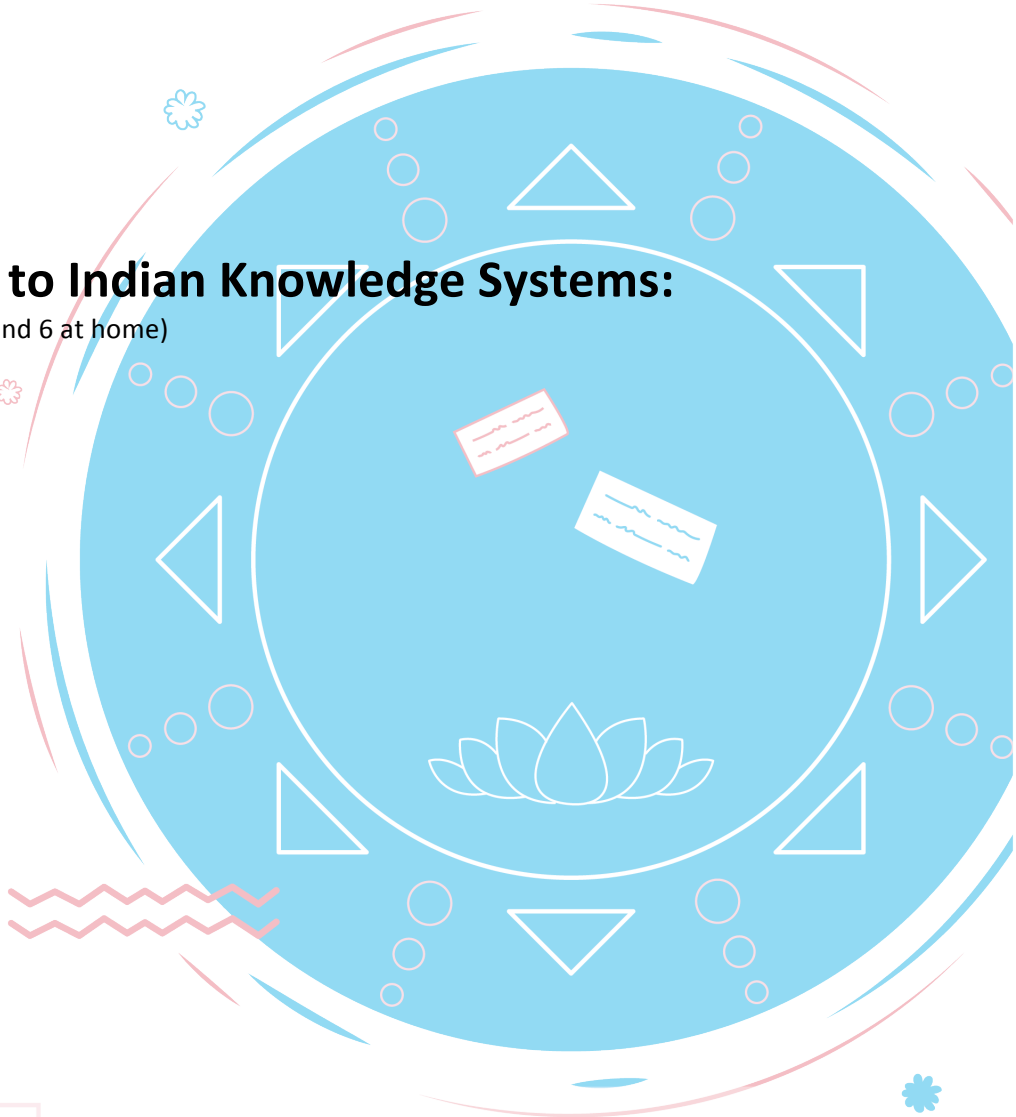
1.0 **Module 1**

Introduction to Indian Knowledge Systems:

20 hours (14 in school and 6 at home)



Design Skills

Design Sensitivity

Exposure 1	- Introduction to Indian Knowledge Systems
Exposure 2	- Abstraction, Metaphors and Giving Form
Exposure 3	- Mapping of Elements of Nature
Exposure 4	- Grids and Composition, Grids and Patterns
Task 1.1 (at School + Home)	- Abstraction, Metaphors and Giving Form
Task 1.2 (at School + Home)	- Mapping of Elements of Design
Task 1.3 (at School + Home)	- Design a Story Book for Children
Task 1.4 (at School + Home)	- Grids and Composition
Final Output	- Grids and Patterns, Grids and Fractal Patterns
	+ Reflections, Self Assessment and References

1.0 Module 1

Introduction to Indian Knowledge Systems:

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Introduction

Indian Knowledge Systems use the ancient and indigenous knowledge of India to arrive at principles and techniques that are timeless, unique, and based on centuries of work. While the meticulously detailed temples with their mathematical grids are awe inspiring, the simple and innovative design solutions and techniques encountered in the rural and urban 'wilds' of India are genuinely surprising and inspiring.

The Eastern tradition, in India gave rise to a design process where the object emerged as a result of giving Form to Ideas. Indian design process aims to give Form to the Formless. The Formless is an abstract principle/phenomenon, for which an Image is created to express the qualities and attributes of that phenomenon.

The different tasks in this module are based on understanding these principles.

Aim of the Module

The aim of this module is to introduce the richness of Indian Knowledge systems. It has direct applications in the filed of design and this module attempts to make the students aware of these possibilities.

The following aspects will be covered during this module:

1. Identify and explore the meanings of abstraction, symbolism and storytelling using principles from ancient Indian arts and design.
2. Familiarising with and following the classical Indian Design Process to give meaning to the abstract, converting formless ideas into form.
3. Learning abstraction-using mapping of various design elements to the human body and elements found in nature.
4. Understand the human body using anthropometric measurements, ratios and movements from classical arts to create universal designs.
5. Learn the importance and application of different types of grids in design and architecture.
6. Explore recursive procedures like fractals to detail forms in design using examples from traditional Indian arts and nature.

Place:

Place: Task 1.1, Task 1.2, Task 1.3 – done at both school and at home

Equipment:

Equipment: Sketchbooks for sketching, Stationary (Pencils, Pens, Colours, Tracing paper), students are advised to use digital devices like computers or tablets (if available, but not necessary)

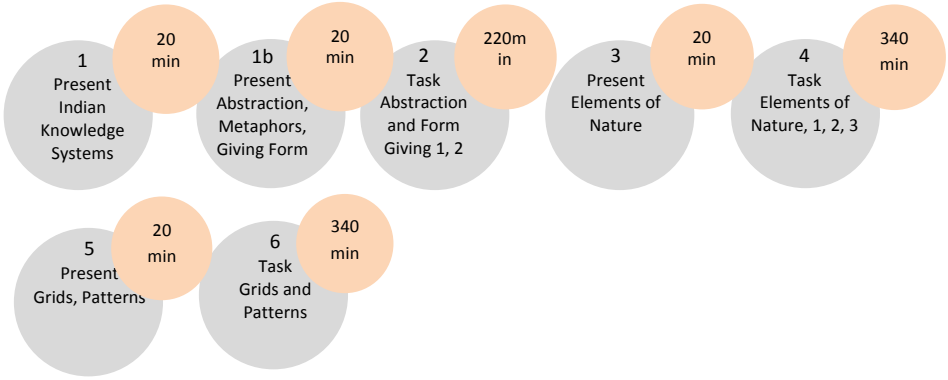
Grouping:

Grouping: Class tasks are done in groups of 3-4 and Home tasks are individually

Exposures:

Exposure 1: Introduction to Indian Knowledge Systems
Exposure 2: Abstraction, Metaphors and Giving Form
Exposure 3: Mapping of Elements of Nature
Exposure 4: Grids and Composition, Grids and Patterns

Task Sequence:



Design Thinking & Innovation Process involvement:

This task involves the following phases of the DT&I Process:
Phase 1. Observe/Empathise/Research (Exploring Abstraction and Form Giving)
Phase 2. Understand/Analyse/Define (Understanding Elements of Nature)
Phase 3. Ideate/Alternate/Create (Grids and Patterns alternatives)
Phase 4. Build/Prototype/Detail (making a presentation)
Phase 5. Evaluate/Reflect/Implement (feedback from others)

Mapping SDG Goals:

The following SDG goals need to be considered while solving this task. While documenting people and events, do think of gender equality and reduced inequalities and concern for life on our planet.

Task 1.0

Task 1.0 = 1.1 + 1.2 + 1.3 + 1.4:
School Hours: 13, Home hours: 7

Task 1.0

Overall Task (Task 1.0 = 1.1 + 1.2 + 1.3 + 1.4)
Topic title:

Introduction to Indian Knowledge Systems

The real world around us can be represented and visualized in a realistic manner and the form or shape that it takes is what we call as 'Realism'. This is a direct representation of the world around us.
On the other hand, aspects of the world around us such as ideas, notions, thoughts, expressions can be represented and visualized in an abstract manner and the form or shape that it takes is what we call as 'Abstraction'. This does not directly depict any person, place or thing but does it indirectly expressing the qualities and attributes through an image of a concept or metaphor.

The Design Process begins with the realisation of an abstract idea and the next step is metaphorising the abstract. This involves giving meaning to the formless ideas using universally understood examples, by mapping concepts from the real world. Using a design grammar from the metaphors then concretizes the abstract and is used to give the abstract a basic Form.

Some examples of abstraction can be found in arts and architecture, such as temples and other places of worship, abstract paintings, sculptures, and so on. The level of abstraction could be from low to medium to high depending on the representation.
Understanding of 'Abstraction' might sound a bit uncertain, fuzzy and unclear. The students will have a much better idea of 'Abstraction' and its role in Indian Knowledge Systems after they take up the challenge as stated in the below mentioned tasks.

The left most building is a famous fisheries office in Hyderabad, India, and is directly realistically represented using the form of a fish. The middle one is the Beijing Airport by Zaha Hadid architects. The roof of the airport is folded in such a way as to resemble the wings of a bird. It holds the essence and communicates it visually, but doesn't literally depict a bird. The third image is that of a temple, which is a highly abstract representation of the cosmos on earth using multi-layered metaphors (for example, the mapping of the different parts of the body to the temple).

More details on Indian Knowledge Systems at: https://jribh.github.io/IKS

Task 1.1a

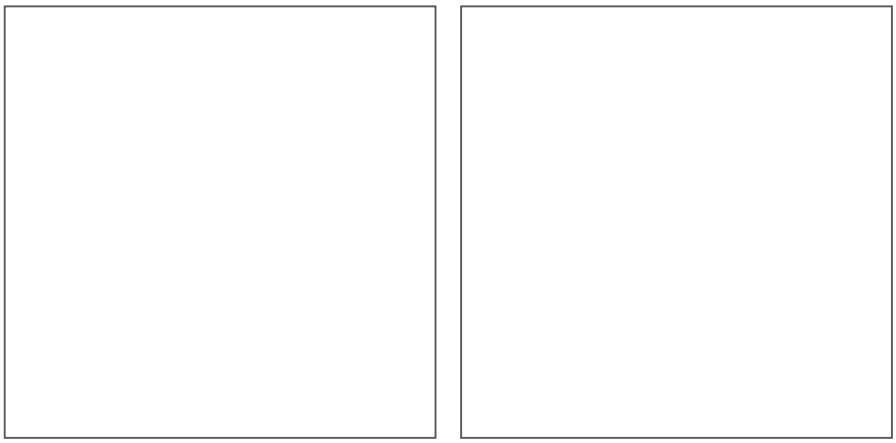
Task 1.1a:
School Hours: 2, Done individually at School

Topic title:

Abstraction and Form giving 1

Consider the following Formless ideas, and sketch them in simple abstract ways such that the core message gets communicated effectively.
A. Paradise and Earth
B. An Explosion
C. The Circle of Life
D. The Centre of the Universe
E. Inner Self

1. Think about what these key words mean to you
2. Visualise, give the idea a form/shape and sketch it
3. Make 2 versions of each idea on A4 size paper in boxes as shown below



Output 1.1a: Visualisation of the idea as sketches

Task 1.1b

Task 1.1b:
Home hours: 2, done individually at Home

Topic title:

Abstraction and Form giving 2:

This task is to understand metaphors to communicate stories as a way of Abstraction.

1. Write a simple story in five lines using the words given below in form of text: Sunrise, Perseverance, Colours, Fear, Determination, Elaborate

2. Using simple abstract shapes, communicate the story in the given five frames as images. Frame 1, 2, 3, 4, 5
3. Use pen/pencil. You can use some colour only if absolutely necessary

Output 1.1b: Story + Visualisation of the story as images

Task 1.2a

Task 1.2a:
Home hours: 2, done individually

Topic title:

Elements of Nature 1:

Introduction to mappings as a way to metaphorise the abstract using examples like elements of nature mappings.
1. Consider the five elements of nature; earth, water, fire, wind and space
2. Click a pictures of articles/things corresponding to each of the elements showing the mapping (representation) of these elements
- Can take articles in and around your house, paintings, patterns, objects and so on
3. For each of the images, write in one or two lines how you think the mapping has been done
Output 1.2a: 5 images + write-up to be presented in class

Task 1.2b

Task 1.2b:
School hours: 2, Done individually

Task Title:

Elements of Nature 2:

In this task the mappings as a way to metaphorise the abstract are understood through human body mappings.

1. Draw the above human body silhouette
2. Label it with the given words in such a way that the labeled body part best

compliments the word
Movement, Thought, Life, Motion, Work, Rest
3. In addition to the above, label which part of the body best represents the five elements of nature
Earth, Water, Fire, Wind and Space
Output 1.2b: Human body silhouette with the labels

Task 1.2c

Task 1.2c:
Home hours: 2, Done individually

Task Title:

Elements of Nature 3:

In this task the students understand how the design principles can be applied visually using different shapes and concepts like positions and hierarchies.
1. Take 5 different leaves/flowers/stones (any one of these) of different sizes, shapes, textures and colours
2. Arrange the leaves/flowers/stones in a hierarchical order based on their visual attributes like size, colour, shape, etc.
3. Explain what kind of hierarchical order is it based on
3. This is an example shown below of leaves arranged hierarchically.

Output 1.2b: Any one of these (leaves/flowers/stones) arranged hierarchically

Task 1.3a

Task 1.3a:
School hours: 2, Done individually

Topic title:

Grids and Compositions 1:

In this task the students will identify grids and compositions used in sacred architectural spaces.
1. Take any temple/mosque/church floor plan and trace it out or take the print out:
• Identify and draw the major and minor grids
• Identify major mappings if applicable and label them
• Label the cardinal directions
• Label the different parts of the plan (Eg: grabhagriha in temple, mihrab in a mosque, alter in church)
Output 1.3a: Identification of grids and other factors in sacred architectural spaces

Task 1.3b

Task 1.3b:
Home hours: 2, Done individually

Topic title:

Grids and Compositions 2:

In this task the students will identify principles of design, composition, storytelling and abstraction through visual analysis of ancient sculptures.

1. Take any Ellora Cave Figure, trace or print it out, and do the following:
• What is the story behind the figure?
• How have the elements of the story been abstracted and shown?
• Mark the major grids on the figure
• Mark points of focus on the figure
Output 1.3b: Identification of design principles in sculptures

Task 1.4a

Task 1.4a:
School hours: 3, Done individually

Topic title:

Grids and Patterns 3:

In this task the students will identify grids and patterns used for making Rangoli in different parts of our country.

1. Select images of 2 Rangoli patterns as practiced in other states (outside your own state)
2. Identify the basic grid used in making of the Rangoli Pattern
3. Identify the material used for the Rangoli
4. How are the materials used for the Rangoli sustainable?
5. On which occasion is the Rangoli made?
6. Based on your study, make a Rangoli at home and click a picture of it
Output 1.3: Study and analysis of 2 types of Rangoli patterns and making of one at home

Task 1.4b

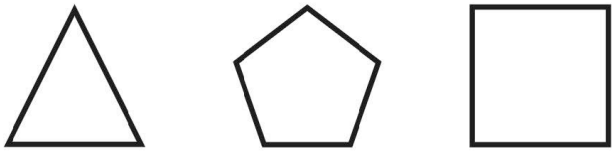
Task 1.4b:
School hours: 3, Done individually

Topic title:

Grids and Fractal Patterns

In this task the students will understand the use of repeated recurring patterns or self-similar replication of forms can be used to detail designs,.

1. Take any one of the shapes given below:

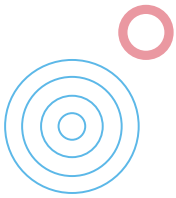


2. Join the midpoints of each edge to get a smaller version of the same shape. 3. Continue the process until you can't go any further
3. In the above task, the midpoints were joined. Try what happens if we try to join the points a third of the distance away from the vertex
Output 1.3b: Drawings of recurring patterns

Reflection:

Questions to ponder:
- Would you like to study some more about Indian Knowledge Systems?
- Do you now feel that abstraction, use of metaphors, storytelling, grids, patterns and fractals are useful?
- Would you like to use some of these principles at your home?
- Next time you go to a temple/mosque/church/gurudwara, will you look for these principles?

Self Assessment:



Assessment Criteria (Task 1.1 + 1.2 + 1.3) – Assess yourself:
- Abstraction and Form Giving tasks were done well by Visualisation of the Idea as sketches (Individual Task 1.1a)

☐ *Beginning* ☐ *Developing* ☐ *Promising* ☐ *Proficient* ☐ *Excellent*

- Abstraction and Form Giving tasks were done well by creating an appropriate story and then visualizing it as images (Individual Task 1.1b)

☐ *Beginning* ☐ *Developing* ☐ *Promising* ☐ *Proficient* ☐ *Excellent*

- The pictures of articles/things mapping (representation) to each of the elements of nature were done well. (Task 1.2a)

☐ *Beginning* ☐ ☐ *Promising* ☐ ☐ *Excellent*

- The mapping (representation) to human body the keywords and the elements of nature were done well. (Task 1.2b)

☐ *Beginning* ☐ ☐ *Promising* ☐ ☐ *Excellent*

- The mapping of design principles for organizing the chosen objects in terms of heirarchy were done well. (Task 1.2c)

☐ *Beginning* ☐ ☐ *Promising* ☐ ☐ *Excellent*

- The Identification of grids and other factors in sacred architectural spaces were done well (Task 1.3a)

☐ ☐ ☐ ☐ ☐

Beginning *Promising* *Excellent*

- The identification of design principles in sculptures was done well (Task 1.3b)

☐ ☐ ☐ ☐ ☐

Beginning *Promising* *Excellent*

- The Identification of grids and other factors in Rangoli pattern as well as making of one was done well (Task 1.4a)

☐ ☐ ☐ ☐ ☐

Beginning *Promising* *Excellent*

- The drawing of recurring patterns as fractals was done well (Task 1.4b)

☐ ☐ ☐ ☐ ☐

Beginning *Promising* *Excellent*

Other References:

Other suggested References:

1. **References:**

Introduction to Indian Knowledge Systems – detailed resources along with interactive resources:
https://jribh.github.io/IKS

2. Visual Symmetry:
https://www.dsource.in/course/visual-symmetry

3. Konarak Temple
https://www.dsource.in/resource/sun-temple-konark-orissa