

Title of the Course: **Design Criticism**  
Course No: **0731 01 Arch 1201**

Full Marks: 60  
Time: 03 Hours

\* Figures in the right margin indicate full marks.

### Section-A

There are **four (04)** questions in this section. Answer any **three (03)** questions.

- Q.1 How did Marcus Vitruvius Pollio influence the development of architectural theory through the principles stated in 'De architectura'? [L1; CLO 3] **10**
- Q.2 Analyze the role of descriptive criticism in understanding architectural form, context, and the design process. [L4; CLO 1] **10**
- Q.3 Critically discuss how technological advancements influenced the theoretical development of modern architecture within the discourse of design criticism. [L2; CLO 3] **10**
- Q.4 Explain how judgment, discernment, and discrimination contribute to the evaluation and interpretation of architectural design. [L2; CLO 1] **10**

### Section-B

There are **four (04)** questions in this section. Answer any **three (03)** questions.

- Q.1 a) How do you prepare for a 'Technique-specific Critique'? [L1; CLO 2] **03**
- b) Discuss any five of the important principles for receiving critique well. [L2; CLO 2] **07**
- Q.2 a) Differentiate between 'Criticism' and 'Critical Thinking'. [L2; CLO 4] **04**
- b) Identify different dynamics and limitations of critical thinking in architecture. [L3; CLO 4] **06**
- Q.3 Compare different architectural design process models and identify the role of criticism in design development. [L4; CLO 1] **10**
- Q.4 Apply the aesthetic theories to appraise any art form. Use any renowned masterpiece of visual art for each theory as your reference. [L5; CLO 3] **10**

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| Title of the Course: | Ecology and Vernacular Systems | Full Marks: 60 |
| Course No:           | 0521 01 ES 1271                | Time: 03 Hours |

\* Figures in the right margin indicate full marks.

### Section-A

There are **four (04)** questions in this section. Answer any **three (03)** questions.

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|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|
| Q.1    | Explain the significance of the four ecological elements in architecture and describe their relevance to climate-responsive design. [L2; CLO 1]                                                         | 10 |
| Q.2    | Analyze how tradition, technology, and urbanism interact with each other to shape environmentally responsive architectural solutions. Discuss with appropriate examples. [L4; CLO 2]                    | 10 |
| Q.3    | Name the primary elements of biophilic design under nature inspiration approach and explain one of the elements in the light of a prominent building project. [L1; CLO 3]                               | 10 |
| Q.4 a) | Briefly illustrate the "Nature Similarity" and "Commonwealth" principles of green architecture. [L2; CLO 3]                                                                                             | 05 |
| b)     | Considering the design of your last studio project, titled "Moodscapes: An Exploration of Emotion in Space," which of the above principles would you adopt in your chosen context, and why? [L5; CLO 4] | 05 |

### Section-B

There are **four (04)** questions in this section. Answer any **three (03)** questions.

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|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|
| Q.1    | Appraise the importance of context-sensitive vernacular architectural practice in relation to socio-cultural and physical factors. [L4; CLO 1]                               | 10 |
| Q.2    | Assess the characteristics of built environment of tropical vernacular architecture with proper sketches. [L4; CLO 2]                                                        | 10 |
| Q.3    | "Building a house is a cultural phenomenon". Appraise how socio-cultural factors and local beliefs shape vernacular architectural practice in the local context. [L5; CLO 3] | 10 |
| Q.4 a) | Explain the interplay between house form and settlement in the progression of vernacular architecture. [L2; CLO 4]                                                           | 05 |
| b)     | What are the architectural considerations in the development of 'Polar Vernacular' architecture? Explain with neat sketches. [L3; CLO 1]                                     | 05 |

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Title of the Course: **Architecture of the World**  
Course No: **Arch 1233**

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Full Marks: 60  
Time: 03 Hours

\* Figures in the right margin indicate full marks.

**Section-A**There are **four (04)** questions in this section. Answer any **three (03)** questions.

- Q.1 “The Imperial vastness of late Roman architecture was made possible by the widespread use of arch and concrete”- justify this statement with relevant examples. **10**
- Q.2 Explain how cosmology had inspired the development of the Catal Huyuk Settlement. **10**
- Q.3 Assess whether Ziggurats primarily represented the socio-political dominance of rulers or functioned mainly as religious structures. Justify your opinion with relevant examples. **10**
- Q.4 What is Mastaba? Briefly discuss why the Great pyramid of Giza is the finest example of megalithic architecture, using neat sketches. **03+07=10**

**Section-B**There are **four (04)** questions in this section. Answer any **three (03)** questions.

- Q.1 a) Why is Greek Architecture considered timeless? Give your own reasons. **06**
- b) Illustrate the Classical order of architecture using neat sketches. **04**
- Q.2 Evaluate how the Great Bath represents the cultural, ritual, and ideological importance of water and bathing in the Indus Valley Civilization. Support your answer with necessary sketches. **10**
- Q.3 Why do you think the Colosseum is counted as one of the most significant examples of Roman architecture? Justify your opinion with necessary sketches. **10**
- Q.4 “Buddhism upholds secularism, social equity, gender equality, and environmental stewardship”. Explain using examples from Japanese architecture. **10**

Title of the Course: **Physics**

Full Marks: 60

Course No: **0533 01 Phy 1253**

Time: 03 Hours

\* Figures in the right margin indicate full marks.

**Section-A**There are **four (04)** questions in this section. Answer any **three (03)** questions.

- Q.1 a) What do you mean by stress and strain? [L1; CLO 2] **02**
- b) Explain the yield point, elastic limit and elastic fatigue from the graphical representation of load versus extension curve. [L2; CLO 2] **04**
- c) Discuss the relationship between arches, domes and structural stability. [L4; CLO 2] **04**
- Q.2 a) Illustrate the graphical representation of simple harmonic motion. [L2; CLO 1] **02**
- b) Distinguish between damped and unmapped vibration. [L4; CLO 3] **03**
- c) Discuss the effect of damping on forced vibration. [L6; CLO 3] **05**
- Q.3 a) What is the Newton's formula of sound? [L1; CLO 1] **02**
- b) Mathematically explain the effect of density and pressure of sound. [L2; CLO 1] **04**
- c) If the velocity of sound in air at 0°C and 76 cm. pressure is 330 meters/sec, calculate the velocity at 50°C and 70 cm. pressure. [L4; CLO 1] **04**
- Q.4 a) What are the main sources of environmental noise? [L1; CLO 1] **02**
- b) Discuss the condition of good acoustic. [L2; CLO 2] **04**
- c) Analyze the differences between porous absorbers and membrane absorbers in terms of sound absorption mechanism and frequency range. [L4; CLO 2] **04**

### **Section-B**

There are **four (04)** questions in this section. Answer any **three (03)** questions.

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|-----|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|
| Q.1 | a) | What are the three main issues to be considered for daylighting design? [L1; CLO 2]                                                                                                                         | 03 |
|     | b) | Discuss the technique of beam sun lighting with proper diagram. [L3; CLO 3]                                                                                                                                 | 04 |
|     | c) | Explain suitability of lighting on the basis of four factors. [L2; CLO 1]                                                                                                                                   | 03 |
| Q.2 | a) | What conditions are necessary for observing interference fringes? [L1; CLO 1]                                                                                                                               | 03 |
|     | b) | Discuss Young's experiment and derive an expression for<br>i) intensity at a point on the screen and ii) fringe width. [L6; CLO 3]                                                                          | 05 |
|     | c) | Green light wavelength $5100\text{\AA}$ from a narrow slit is incident on a double slit. If the overall separation of 10 fringes on a screen 200 cm away is 3 cm, Evaluate the slit separation. [L5; CLO 3] | 02 |
| Q.3 | a) | Briefly discuss thermal conductivity and thermal diffusivity. [L3; CLO 2]                                                                                                                                   | 03 |
|     | b) | Discuss the spherical shell method of determining the thermal conductivity of a substance. [L6; CLO 3]                                                                                                      | 05 |
|     | c) | Distinguish between heat capacity and specific heat. [L4; CLO 2]                                                                                                                                            | 02 |
| Q.4 | a) | Deduce Planck's law in blackbody radiation. Explain how Wein's displacement law and Rayleigh-Jeans law can be obtained from this formula. [L5, CLO 3]                                                       | 07 |
|     | b) | Demonstrate a short note on solar radiation. [L2; CLO 3]                                                                                                                                                    | 03 |

Title of the Course: **Basic Design Theory**  
Course No: **Arch 1231**Full Marks: 60  
Time: 03 Hours

\* Figures in the right margin indicate full marks.

**Section-A**There are **four (04)** questions in this section. Answer any **three (03)** questions.

- Q.1 Articulate your own understanding about “Datum” in architectural design and its application in the design process, using necessary examples. **10**
- Q.2 How can the geometric properties and organization of basic design elements create different modes of physical spaces in architecture? Elaborate with necessary examples and sketches. **10**
- Q.3 “Difference between space and place depends on the extent to which human beings have given meaning to a specific area”. Defend the statement of philosopher Yi-Fu Tuan with evidence. **10**
- Q.4 a) Why site analysis is necessary for an architectural project? **03**
- b) As an architect, which procedure would you prefer to conduct a systematic site analysis in architecture? Justify. **07**

**Section-B**There are **four (04)** questions in this section. Answer any **three (03)** questions.

- Q.1 “Architecture has existence, but it has no presence. Only the work of architecture has presence”- evaluate the statement by explaining the intangible spirit of architecture. **10**
- Q.2 a) What do you mean by ‘Design Process’? **02**
- b) Construct an order of five steps of design process and discuss it using necessary examples and sketches. **08**
- Q.3 Describe Glass box and Black box design method. Provide your argument on the limitations of each method. **10**
- Q.4 “Criticism links the creative process”-evaluate this statement by using the functional aspect of criticism. **10**