

Title of the Course : **Urban Design**
Course No: **0731 01 Arch 4103**

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.

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|-----|---|-----------|
| Q.1 | How can <i>Madanipour</i> 's "Seven Ambiguities of Urban Design" be applied to understand the complexity of a contemporary urban area in Bangladesh? Explain with suitable urban examples. [L3; CLO 1, 2] | 10 |
| Q.2 | Evaluate the relevance of the <i>Conservation and Park Movement</i> in addressing contemporary socio-environmental challenges in rapidly urbanizing cities. [L5; CLO 1, 3] | 10 |
| Q.3 | Differentiate <i>Water Urbanism</i> from the <i>Resilient City</i> approach in terms of their treatment of ecology, infrastructure, public space, and climate adaptation. [L4; CLO 1, 3] | 10 |
| Q.4 | If you were to reinterpret selected principles from Le Corbusier's Radiant city for the future development of Dhaka, what urban design strategies would you propose and why? [L6; CLO 1, 3] | 10 |

Section-B

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

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|-----|---|-----------|
| Q.1 | Analyze the role and significance of visual elements of urban space- such as facades, floorscape, street furniture, and landscaping- in shaping the aesthetic quality, spatial character, and user experience of urban environments. [L4; CLO 2, 3] | 10 |
| Q.2 | Critically analyze Gordon Cullen's concepts of Townscape and Serial Vision, and assess how these ideas contribute to creating dynamic, sequential, and visually engaging urban experiences. Illustrate your answer with at least three relevant sketches. [L4; CLO 3] | 10 |
| Q.3 | a) Evaluate the importance of the Public Realm in urban design and justify why public spaces are regarded as the "living room" of cities. [L4; CLO 2] | 04 |
| | b) Analyze the criteria used to assess the qualities of "Comfort & Image" and "Sociability" in successful public places. [L4; CLO 2] | 06 |
| Q.4 | Critically discuss the relevance of the eleven principles identified by Project for Public Spaces (PPS) for creating great community places, relating your discussion to your studio design project and demonstrating how these principles can inform and improve your design approach. [L4; CLO 1] | 10 |

Title of the Course : Urban Design Theories and Criticism
Course No: Arch 4141

Full Marks : 60
Time : 03 Hours

* Figures in the right margin indicate full marks.

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

- Q.1 How can *Madanipour's* "Seven Ambiguities of Urban Design" be applied to understand the complexity of a contemporary urban area in Bangladesh? Explain with suitable urban examples. 10
- Q.2 Evaluate the relevance of the *Conservation and Park Movement* in addressing contemporary socio-environmental challenges in rapidly urbanizing cities. 10
- Q.3 Differentiate *Water Urbanism* from the *Resilient City* approach in terms of their treatment of ecology, infrastructure, public space, and climate adaptation. 10
- Q.4 If you were to reinterpret selected principles from Le Corbusier's *Radiant City* for the future development of Dhaka, what urban design strategies would you propose and why? 10

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

- Q.1 Analyze the role and significance of visual elements of urban space—such as facades, floorscape, street furniture and landscaping, in shaping the aesthetic quality, spatial character, and user experience of urban environments. 10
- Q.2 Critically analyze Gordon Cullen's concepts of Townscape and Serial Vision, and assess how these ideas contribute to creating dynamic, sequential, and visually engaging urban experiences. Illustrate your answer with at least three relevant sketches. 10
- Q.3 a) Evaluate the importance of the Public Realm in urban design and justify why public spaces are regarded as the "living room" of cities. 04
b) Analyze the criteria used to assess the qualities of "Comfort and Image" and "Sociability" in successful public places. 06
- Q.4 Critically discuss the relevance of the eleven principles identified by Project for Public Spaces (PPS) for creating great community places, relating your discussion to your studio design project and demonstrating how these principles can inform and improve your design approach. 10

Title of the Course :	Resilient Cities	Full Marks : 60
Course No:	0731 01 Arch 4131	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) Define resilience and explain its key characteristics. [L2; CLO 1] **03**
b) Evaluate why resilience has become a critical priority in rapidly urbanizing regions, with reference to urban hazards and vulnerability conditions. [L5; CLO 3] **07**
- Q.2 How can blue infrastructure and nature-based solutions be applied in the urban design process to enhance climate resilience in cities? [L3; CLO 4] **10**
- Q.3 Explain how spatial design contributes to social and environmental sustainability in disaster-prone cities, using relevant real-world examples. [L3; CLO 2] **10**
- Q.4 Design a conceptual urban resilience strategy for climate-vulnerable Khulna city, incorporating principles of water urbanism. [L6; CLO 4] **10**

Section-B

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

- Q.1 a) Define disaster-resilient building form and explain its key characteristics. [L2; CLO 2] **05**
b) Explain how building form influences vulnerability to natural hazards such as cyclones and floods. [L4; CLO 3] **05**
- Q.2 Critically evaluate major global frameworks for resilient cities such as the Sendai Framework, Rockefeller 100 Resilient Cities initiative and UNDRR approaches. Discuss their relevance for developing countries. [L5; CLO 2] **10**
- Q.3 Evaluate the applicability of global resilience frameworks in the context of rapidly urbanizing cities like Khulna. [L5; CLO 2] **10**
- Q.4 Analyze how Dhaka's urban planning and design strategies are addressing climate change and rising temperatures, with special focus on design innovations for heat mitigation. Also, evaluate how these approaches can be adapted as models for other heat-vulnerable cities. [L5; CLO 3] **10**

Title of the Course : **Public Interest Architecture**
 Course No: **Arch 4147**

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.

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|-----|----|---|-----------|
| Q.1 | a) | Is Public Interest Architecture best described as co-production or co-design? Take a stance and support it with clear reasoning. | 05 |
| | b) | How does the commodification of architecture influence the way we experience and interact with built spaces? | 05 |
| Q.2 | | How does the case of Pruitt-Igoe illustrate the failure of architectural design and planning? Discuss the social, economic, and architectural factors that contributed to its downfall. | 10 |
| Q.3 | | From Vitruvius to Victor, where do you position yourself as designer with regard to this spectrum of architectural design thinking? Why? | 10 |
| Q.4 | | What are the components of the functional complexity in the design process? In the real world, which aspect(s) of this complex do you find to be the most difficult to practice? | 10 |

Section-B

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

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|-----|----|--|-----------|
| Q.1 | a) | Define design thinking. Write down the four sequential steps of design thinking. | 05 |
| | b) | 'Design thinking is a process, not a product driven model' - Elaborate the statement. | 05 |
| Q.2 | | Draw a process model diagram of public interest design by highlighting people's participation in different stages. | 10 |
| Q.3 | a) | Differentiate between 'LEED' and 'SEED'. | 06 |
| | b) | How can the process of engaging people in the design methods help to upgrade the values of an underserved community? | 04 |
| Q.4 | a) | Why is mapping important in the design process of public interest architecture? | 02 |
| | b) | What level of mapping you would adopt to interpret upgrading of informal settlement? Explain with relevant example. | 08 |

Title of the Course : **Architecture of Bengal**
Course No: **0731 01 Arch 4105**

Full Marks : 60
Time : 03 Hours

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Section-A

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

- Q.1 a) How was the world's largest delta formed, and what are the geographical processes involved? [L1, CLO 1] **04**
b) Why is the Bengal Delta referred to as *Dozakh Pur-i-Niamat*? Explain the environmental reasons of this expression. [L2, CLO 1] **06**
- Q.2 How did Buddhist architecture in Bengal respond to its context in terms of materials, spatial organization, and architectural identity? Justify with sketches. [L5, CLO 2,3] **10**
- Q.3 Explain why the pavilion is considered a paradigm of Bengal architecture and culture. Identify the pavilion as a major element of Bengal's architectural identity with appropriate justification. [L3, CLO 1] **10**
- Q.4 a) Compare the use of building materials in relation to the different geographical regions of Bangladesh with proper sketches. [L4, CLO 2] **10**

Section-B

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

- Q.1 The mosques of Khan Jahan Ali demonstrate a unique adaptation to the deltaic climate. Explain your arguments. [L3, CLO 2, 3] **10**
- Q.2 Discuss the transformation of mosque architecture in Bangladesh from the Sultanate to the Mughal to Colonial period. [L3, CLO 3] **10**
- Q.3 Justify the statement that the architectural concept of the bungalow originated in Bengal and spread throughout the world. [L3, CLO 1, 2] **10**
- Q.4 Evaluate how the works of Muzharul Islam reflect and adapt the regional identity of Bangladesh. [L4, CLO 3] **10**

Title of the Course : **Architectural Conservation**
Course No: **Arch 4143**Full Marks : 60
Time : 03 Hours

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

- Q.1 a) Define the term 'spiritual significance' of a heritage building. **03**
b) Compare 'historical significance' and 'historical values' within the context of heritage conservation. Are they distinct concepts? Illustrate your answer with specific examples. **07**
- Q.2 As a conservation professional, what are the best conservation methods for a 15th-century coastal defensive tower damaged by weathering and vegetation? Explain the reasoning behind your choices. **10**
- Q.3 Explain how rapid urban expansion and modern infrastructure developments endanger heritage sites. Outline the key steps of a Heritage Impact Assessment (HIA) framework designed to protect these assets. **10**
- Q.4 What is Outstanding Universal Value (OUV)? Critically examine the ten criteria of OUV according to the operation guidelines of UNESCO world heritage committee. **10**

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

- Q.1 "Too fast interventions may lead to inappropriate or unnecessary intervention". Evaluate the statement with example. **10**
- Q.2 Identify the main causes of structural failure in heritage buildings. In your opinion, which of these factors are the most critical to address when safeguarding heritage sites in your local city? **10**
- Q.3 Differentiate the traditional and contemporary conservation technique and materials. Which one is suitable for our context? Give proper justification. **10**
- Q.4 Suppose one heritage building is situated in a coastal region having soft clay deposit with low bearing capacity. Identify the possible structural damages of that building under such geological conditions and their remedial solution. **10**

Title of the Course : **Fundamentals of Statistics**
Course No: **0542 01 Stat 4171**

Full Marks : 60
Time : 03 Hours

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Section-A

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

- Q.1 a) Define statistics with its importance in Architecture? 04
Specify some danger to the use of statistics. [L1,2; CLO2,4]
- b) Define measurement scale? Explain different types of measurement scales. [L1,3; CLO1,2] 04
- c) Give a brief description of the importance of graphs and diagrams for representing statistical data. [L1,3; CLO2,3] 02
- Q.2 a) What do you mean by central tendency of data? What are the measures of central tendency? Explain them with examples. [L1; CLO1,3] 05
- b) Define variance for group and ungroup data. Proof the following statement "Variance is independent of origin but not of scale". [Numerical proof also be accepted] [L1,4; CLO2,3] 05
- Q.3 a) Suppose that 30 students are enrolled in a statistics class, of 4th Year, Term-1, of Architecture discipline, Khulna University (KU) and their test scores are as follows:
50, 38, 42, 63, 85, 40, 46, 39, 45, 47, 43, 52, 56, 59, 64, 80, 45, 51, 54, 82, 68, 86, 65, 52, 60, 34, 87, 48, 55, 58.
(a) Construct a frequency distribution with a suitable class interval;
(b) Draw a histogram cumulative frequency. [L3,5; CLO6] 05
- b) Define Arithmetic mean (AM), Geometric mean (GM), and Harmonic mean (HM) with an example. For two non-zero positive numbers x_1 and x_2 , show that (i) $AM \times HM = GM^2$; (ii) $AM \geq GM \geq HM$ and (iii) under what conditions, AM, GM, and HM are equal. [L1; CLO3] 05
- Q.4 a) Define variance. Find the mean and variance of first n natural numbers. [L1; CLO3] 04
- b) Define weighted mean. Six samples of students of Khulna University (KU), of sizes 50, 55, 40, 48, 35, and 60 were taken from six schools, giving mean heights 4.3, 4.7, 5.0, 5.1, 4.8, and 5.7 ft. respectively. Use an appropriate measure of central tendency to estimate the mean height of the students of KU. [L3,6; CLO3] 04
- c) What are the methods of primary data collection? [L1; CLO3] 02

Section-B

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

- Q.1 a) Define correlation analysis? How do you draw an idea about correlation from scatter plot? [L1,5; CLO1,2] 03

- b) What does a coefficient correlation measure? Discuss the situation when $r=+1$, $r=-1$ and $r=0$. [L4,5; CLO2,4] 04

- c) From the following table, find the correlation coefficient between income and expenditure of wage-earner and comment on the results: 03

Month	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.
Income	46	54	56	56	58	60	62
Expenditure	36	40	44	44	42	58	54

[L3,4; CLO1]

- Q.2 a) Define regression analysis with its assumptions? Describe properties of regression coefficients. [L1,3; CLO2,3] 05

- b) The following table gives the aptitude test scores and productivity indices of 10 workers selected at random: 05

Aptitude test scores	60	62	65	70	50	53	73	65	82	72
Productivity index	68	60	62	80	85	40	52	62	60	81

Find:

- (i) The regression coefficient of productivity index on aptitude test score; and

- (ii) Make a comment on your findings. [L3,4; CLO1]

- Q.3 a) Define sampling frame. How does census survey differ from sample survey? [L1; CLO6] 03

- b) Define cluster sampling with an example. Under which conditions the cluster sampling is used. How does cluster sampling differ from stratified sampling? [L1,3; CLO6] 04

- c) Define confidence interval. If 158 cm is the calculated mean height of a sample of 120 women, with a standard error of 3cm, compute the 95% confidence interval of the mean height in the population of women and interpret the result. [L3,4; CLO6] 03

- Q.4 a) Define estimation and estimator in statistics. What are the properties of a good estimator? Explain Briefly. [L1,4; CLO1] 05

- b) Define the following terms with an example: 05
 (i) Statistical tests; (ii) Null hypothesis; (iii) Alternative hypothesis; (iv) Type-I error; and (v) Type-II error. [L1; CLO4]

Title of the Course : **Principles of Economics**
Course No: **0311 01 Econ 4171**Full Marks : 60
Time : 03 Hours

* Figures in the right margin indicate full marks.

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

- Q.1 a) Define Marginal Utility. [L1, CLO 1] **02**
 b) Explain the relationship between Total Utility and Marginal Utility. **04**
 [L4, CLO 1]
 c) Outline and explain the law of Diminishing Marginal Utility. **04**
 [L2, CLO 1]
- Q.2 a) Define Iso-quant curve. [L1, CLO 4] **02**
 b) Identify the characteristics of Land as a factor of production. **03**
 [L3, CLO 4]
 c) Briefly explain the concept of Production Possibility Curve (PPC) **05**
 with suitable example. [L4, CLO 4]
- Q.3 a) Explain whether GDP is a suitable indicator to describe the actual **05**
 economic situation. [L4, CLO 3]
 b) Describe the income and expenditure methods of measuring national **05**
 income. [L4, CLO 3]
- Q.4 a) What is urbanization? [L1, CLO 2] **02**
 b) Elucidate Rostow's five stages of Economic development. **04**
 [L2, CLO 2]
 c) According to your opinion, what are the forthcoming challenges for **04**
 Economic development of Bangladesh? [L5, CLO 2]

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

- Q.1 a) Mention the characteristics of a good project. [L2, CLO 3] **02**
 b) How do you explain the Project Planning cycle? [L4, CLO 3] **04**
 c) What are the key issues would you examine in a project screening **04**
 exercise? [L4, CLO 3]
- Q.2 a) Explain the role of market and demand analysis in project **05**
 evaluation. [L3, CLO 2]
 b) What is technical analysis in project appraisal? Discuss its **05**
 importance for infrastructure or housing projects. [L4, CLO 2]
- Q.3 a) Define Development Project Proforma (DPP). [L1, CLO 4] **02**
 b) What are the objectives of Project Selection process? [L1, CLO 4] **04**
 c) Describe the significance of Project Review for a Developing **04**
 country like Bangladesh. [L5, CLO 4]
- Q.4 a) Briefly explain the key programs taken under the Fifth-Five-year **05**
 plan. [L4, CLO 5]
 b) Evaluate the past performance of Five year plans in Bangladesh **05**
 from your own opinion. [L5, CLO 5]