

18ARC62 – MATERIALS AND METHODS IN BUILDING CONSTRUCTION–VI

CONTACT PERIODS: 5 (2 Lecture + 3 Studio) per week

THEORY MARKS : 100

PROGRESSIVE MARKS : 50

DURATION OF EXAM - 4 Hrs

OBJECTIVE: *To acquaint the students with construction practices pertaining to structural glazing, Metal Cladding and roofing systems and to study constructional systems and detailing of alternative material doors, windows and partition.*

OUTLINE:

MODULE 1

- 1) **Glass as a building material:** Glass manufacturing in various types like plate, tinted, decorative, reinforced, laminated glass block, fiber glass, glass murals, partially colored glass, etching of glass and its applications in building industry for both exteriors and interiors. Glass fabrication techniques, fiber reinforced composite materials and products.
- 2) **Frameless glass doors and windows and partitions:** Fixing and fabrication details.

MODULE 2

- 3) **Structural Glazing and cladding:** Fixing and fabrication details.
- 4) **Point supported glazing:** Fixing and fabrication details.
- 5) **Introduction to metal cladding:** ACP, Aluminum louvers; Fixing and fabrication details.

MODULE 3

- 6) **Metal cladding of facades and building envelopes:** Fixing and fabrication details.
- 7) **UPVC, PVC & FRP:** Doors and windows and partitions (Detailing and study of joinery).
- 8) **Wooden sliding and folding doors and partitions:** Principles and methods of construction and detailing.

MODULE 4

- 9) **Steel sliding and folding doors and partitions:** Principles and methods of construction and detailing.
- 10) **Aluminum sliding and folding doors and partitions:** Principles and methods of construction and detailing.

MODULE 5

- 11) **Skylight in steel and glass:** Principles and methods of construction and detailing.
- 12) **Alternative wall technologies:** Sandwich panel walls, PUF panels etc.

NOTE : Minimum one plate on each construction topic. Site visits to be arranged by studio teachers. Study of material applications in the form of portfolio.

REFERENCES:

1. Francis, D.K. (2008), "Building Construction Illustrated", Fourth Edition, Wiley India Pvt. Ltd.
2. Mackay, J.K. (2015) – Volume 1, "Building Construction", Fourth Edition, Pearson India
3. Roy Chudley (2015) – Volume 1, "Construction Technology" Second Edition, Pearson India
4. Barry R. (1999) – Volume 3 & 4, "The Construction of Buildings", Fourth Edition, East-West Press Pvt. Ltd., New Delhi.
5. Lyons Arthur (2014), "Materials for Architects and Builders", Fifth Edition, Routledge.
6. Varghese P.C. (2015), "Building Materials", Second Edition, PHI Learning Pvt. Ltd.