# School of Planning and Architecture: Vijayawada

(An institute of National Importance under the Ministry of Education, Govt. of India)
S.No. 4/4, ITI Road, Vijayawada – 520008, Andhra Pradesh, India

Course: **ARC322 Advanced Building Construction** Class: **VI Sem, B.Arch, 2024 A.Y**
Subject Teachers: **Dr.D.Srinivas, Tanaya Paul**
Contact Periods/week: **05**
Internal Assessment Marks:**50** External Theory Exam:**50** Total Marks:**100**

**Objective**
This course will further students understanding of the logic and details of construction technologies of complex and advanced systems and their impact on production of complex buildings.

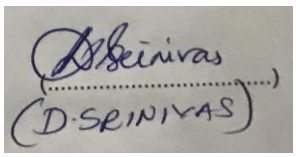
| S.NO | Week of | TOPIC OF CLASS LECTURE & DISCUSSION | CLASS ACTIVITY & ASSIGNMENTS |
|---|---|---|---|
| 1 | **Week 1** | Introduction to the Course;<br>***Introduction to Steel plane Trusses and Pre-engineered buildings***<br>Construction of Steel trusses for various spans, ridged truss, saw tooth truss with lattice girders | Lecture |
| 2 | **Week 2** | Roof lighting, Aluminium sheet and profiled MS sheet cladding and roof fixing details. Detailing of<br>Steel trusses: Tubular and L-angle trusses with 8-16m spans. | Lecture<br>Assignment-1 (Site visit) |
| 3 | **Week 3** | Detailing of a Pre-engineered<br>building: Including Roof fixing details with aluminium sheet and profiled MS sheet cladding | Lecture<br>Presentation |
| 4 | **Week 4** | ***Detailing of large span roofs***<br>Shell roof, vaults folded plate, geodesic domes, space frame, tensile structures, pneumatic<br>structures etc. | Lecture &<br>Drafting Exercise |
| 5 | **Week 5** | Principles and methods of construction including form-work techniques and reinforcement details.<br>Principles and methods of construction including form-work techniques and reinforcement details. | Lecture &<br>Drafting Exercise |
| 5 | **Week 6** | Principles and methods of construction with explorations using physical models.<br>Detailing of a space frame; Principles and methods of construction with explorations using Physical models. | Lecture<br>Assignment-1 Presentation |
| 7 | **Week 7** | ***Tensile structures and pneumatic structures***<br>Principles and methods of construction with explorations using physical models. | Lecture and workshop introduction |
| 8 | **Week 8** | ***Tensile structures and pneumatic structures***<br>Principles and methods of construction with explorations using physical models. | Lecture |
| 9 | **Week 9** | Workshop on long span roof structures | Workshop |

| S.NO | Week of | TOPIC OF CLASS LECTURE & DISCUSSION | CLASS ACTIVITY & ASSIGNMENTS |
|---|---|---|---|
| 10 | **Week 10** | **Mid Semester Examinations** | **Internal Assessment – II** |
| 11 | **Week 11** | Presentation on long span roof structures | Presentation by students |
| 12 | **Week 12** | ***Plastics as a building material*** Types, properties and uses of plastics such as polycarbonates, acrylics, PVC polymer films, and fiber reinforced plastic. Application and details. | |
| 13 | **Week 13** | ***Metal cladding of facade and building envelope*** Curtain walling, structural glazing and cladding, pint supported glazing, ACP aluminium louvers and advanced method of constructions like Kinetics facade etc. | Lecture |
| 14 | **Week 14** | ***Metal cladding of facade and building envelope*** Curtain walling, structural glazing and cladding, pint supported glazing, ACP aluminium louvers and. | Lecture |
| 15 | **Week 15** | Advanced method of constructions like Kinetics facade etc | Drafting<br>Display of Marks of **Internal Assessment – III** |
| 16 | **Week 16** | Revision | Discussion |

**Tentative break-up of Internal Assessment Marks:**

| S.No. | Categories of Evaluation* | Marks |
|---|---|---|
| 1 | Internal Assessment - I | 15 |
| 2 | Internal Assessment – II (Mid Semester Examination) | 20 |
| 3 | Internal Assessment - II | 15 |
| | Total | 50 |

** The Marks allotted against each category is tentative. Categories of evaluation are only indicative and may increase or decrease*




**Signature of Subject Teacher** **Signature of Head of the Department**