|  |  |
| --- | --- |
| AR 232  Appropriate Building Technology | **L-T-P**  **3-0-0**  **3 credit** |
| Basic shelter issues in India. National Building Organization-Recommendation of housing & Urban development Corporation.  Traditional materials and techniques-pressed soil blocks, soil cement blocks and other alternate building materials-fly ash brick, by product gypsum, bamboo, jute stalk etc.  Building process-different types of walling, roofing, foundation. Pre-cast blocks.  Laurie Baker’s experiments in low-cost housing. Modular construction. Experiments conducted by CBRI Roorkee.  CE 804 A/B (b) COST EFFECTIVE BUILDING TECHNIQUES  Module I  Cost Reduction Techniques – Planning aspects  Innovative techniques for foundation- ground improvement by rope drains-bamboo  reinforcement-sand piles- Brick arch foundation- stub foundation  Foundations in weak soil deposits  Module II  Locally available building materials and their usability, Corrugated roofing sheets from coir,  Applications of bamboo in building construction-flooring-roofing-ceiling-Trusses.  Innovative techniques for walls- Lato blocks-cellular concrete blocks-hollow concrete  blocks-hollow clay blocks- Stabilized Soil blocks-Stone masonry blocks- Sand lime bricks.  Straw-bale technology.  Innovative technique for super structure- Rat trap bond masonry (Practical assignment)  Module III  Innovative techniques for roofing- Funicular shells-Precast reinforced concrete channel units-  Precast reinforced concrete cored units- Prestressed concrete hollow cored units- Precast  RCC joists flooring/roofing systems- roofing system with cellular units- Reinforced brick  panel roofing system-Two-way spanning flooring system using precast units- Cellular light  weight concrete roofing units- Ferro cement ribbed slabs and folded plates- Filler slabs .  Innovative roofing technology- Filler slabs (Practical assignment)  Module IV  Mud Construction – Mud as building and building material – Field tests for identification of  suitable soil for mud construction- Techniques for mud stabilization.- Techniques of mud  construction- finishes and protective treatments  Mud Construction- Production of mud blocks (Practical assignment)  Module IV  Prefabricated building components – advantages of prefabrication. Ferro-cement products.  Applications of industrial wastes in building process – Fly ash-Lime sludge  Prefabrication- Ferro-cement slab (Practical assignment) | | |
| Reference Books:  1. A.G MadhavaRao and D.S Ramachandra Murthy : Appropriate Technologies for Low cost housing  2. Mohan Rai and M.P Jaisingh: Advances in building materials and construction, CBRI Roorkee Publications  3. F.S. Merrit: Building Construction Hand book.  4. D.J.Perry&P.S.Brandew: Cost planning of buildings. | | |