SUBJECT NO-AR20205, SUBJECT NAME- BUILDING CONSTRUCTION

LTP- 3-0-0,CRD- 3

SYLLABUS :-

ARXXXX: BUILDING CONSTRUCTION Credits: 3 L-T-P: 3-0-0 Prerequisite: None Course Overview: This theory course shall run in parallel to Building Construction Sessional I and shall supplement the studio with construction theory inputs over and above illustrations. The students will be acquainted with theoretical background behind constructional practices. The course will cover basic knowledge of masonry and its laying, various types of foundations and RCC work which shall come in handy in subsequent semester sessionals. Other constructional practices that do not require illustrations to be made like, finish work, shoring and scaffolding shall also be covered in this course. Students would also be introduced to special constructions and modern technological advances in constructional practices like fire resistive structures and cost effective building technologies. Learning Objectives: 1. Understand the different types of masonry and its bonding and other constructional details. 2. Recognize the various types of shallow and deep foundations and its applications while understanding the basic concept of soil bearing capacity. 3. Examine the types of RCC beams, columns, slabs, shear walls etc. in light of structural thumb-rules of dimension proportion and reinforcement requirement. 4. Get acquainted with finish work like plastering, pointing, painting etc. and temporary structures like shoring and scaffolding. 5. Explore advancements in constructional practices which are cost effective, suitable for mass construction and are fire resistive. Course Curriculum: Module 1 : Masonry and its types Brick and Stone masonry: types of brick and their dimensions, bonds in brickwork, classification of stone masonry. Composite masonry: cement concrete (hollow and solid); hollow clay tile masonry; glass block masonry. Construction details of brick and stone arches including lintels. Module 2 : Foundation and its types Concept of bearing capacity. Introduction to different types of shallow and deep foundationModule 3 : RCC work Types of RCC beams and columns, shear wall, dimension proportion and reinforcement details, different type of slab systems. Module 4 : Finish work Plastering, pointing, flooring, DPC, painting, terracing Module 5 : Temporary structure – shoring scaffolding Shoring, underpinning, scaffolding and form work. Module 6 : Special construction Introduction to Cost Effective Construction Technologies (CECT) in building construction Introduction to BMTPC mass construction techniques. Fire resistive construction for different components of a buildingReading List: 1. Arora, S.P. Bindra, S.P. (2010). A Textbook of Building Construction, New Delhi: Dhanpat Rai Publications. 2. Bureau of Indian Standard (BIS), (2016). National Building Code of India 2016 (Volume-1 2). 3. Ching, F. D. K. (1991). Building Construction Illustrated. New York, NY: Van Nostrand Reinhold. 4. Chudley, R. Greeno, R. (2008). Building Construction Handbook. Oxford: Elsevier Ytytytyt 5. Emmitt, S. Gorse, C. (2010). Barry’s Introduction to Construction of Buildings. New Jersey: Wiley-Blackwell. 6. Frederick, S.M. Jonathan, T. R. (2000). Building Design

and Construction Handbook, McGraw-Hill 7. Kumar, S. (2010). Building Construction. New Delhi: Standard Publisher and Distributor. 8. Prabhu, B.T.S., Paul, K.V. Vijayan, K. (2016), Calicut: Spades Publisher and Distributors. 9. Punmia, B.C.(2016). Building Construction, New Delhi: Laxmi Publications 10. Raj, P.P. (2017). Building Construction Materials and Techniques. New Delhi, Chennai: Pearson. 11. Sharma, S.K. (2013). A Test Book of Building Construction. New Delhi: S. Chand and Company Limited. 12. Varghese, P.C. (2017). Building Construction. New Delhi: PHI Learning Pvt. Ltd.