

4th Semester	RAG4D001	Agricultural Structures & Green House Technology	L-T-P 3-0-0	3 CREDITS
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MODULE- I (09 hrs)

Design of Steel Structures - Loads and use of BIS codes; rivet connections, specifications, use of code; Welded connections, specifications, use of code; design of structural steel members in tension – identification of tension members in a structure – specifications for maximum stresses- use of code for design; design of structural steel members in compression - identification of tension members in a structure – specifications for maximum stresses- use of code for design; design of structural steel members in bending - identification of tension members in a structure – specifications for maximum stresses- use of code for design; design of steel roof truss – analysis of roof truss – structural components of a roof truss- design of compression member and tension member – use of BIS code

MODULE- II (09 hrs)

Design of Reinforced Cement Concrete (RCC) - Loads and use of BIS codes; analysis and design of singly reinforced sections - under reinforced and over reinforced concrete – significance of design ; design of retaining walls – load analysis – reinforcement arrangement - use of BIS code; design of silos – load analysis – reinforcement arrangement

MODULE- III (09 hrs)

Slope and deflection of Beam - Introduction to strength of materials,slope and deflection of beam using integration techniques, moment area theorems, conjugate beam method, problems of slope and deflection; Masonry Dam - Stability analysis and problems on masonry dam
Statically Indeterminate beams - Analysis of continuous beams using superimposition,and solving problems

MODULE- IV (09 hrs)

Grain Storage Structures - Grain storage, moisture and temperature change in grain bins; Traditional storage structures and their improvement; Improved storage structures (CAP, hermitage storage, Pusa bin, RCC ring bin); Design consideration for grain storage go-down, bag storage structure; Shallow and deep bins, calculation of pressure in bins; Storage of seeds; Estimate of domestic power requirement; Sources of power supply, electrification; Electrification for rural housing

MODULE- V (09 hrs)

Green house – Green house/poly house, types of green house, climate control green house, parameters for selection; design, construction and cost; suitable crops, detail project report, bank loan and subsidy

Book:

- Ray Choudhury K P. Engineering Materials, Oxford and IBH Pub. Co.New Delhi.
- Rangwala S C. Engineering Materials, Charotar Pub. House, Anand-1, Gujrat.
- Ahuja T D and Birdi G S. Fundamentals of Building Construction, Dhanpat Rai and Sons,
- Ramamrutham S and Narayanan R. Design of Reinforced Concrete Structures, Dhanpat Rai Pub.
o Co (P) Ltd., New Delhi.
- Sushil Kumar .Treasure of R.C.C Designs, Standard Book House, New Delhi-6
- Khanna P N. Indian Practical Civil Engineer’s HandBook, Engineers Publications, New Delhi
- Khurmi R S. Strength of Materials, S.Chand &Company, New Delhi.

B.Tech (Agriculture Engineering) Syllabus from Admission Batch 2018-19 *4th Semester*

- Ramamrutham S and Narayanan R. Strength of Materials, Dhanpat Rai Pub. Co. (P) Ltd,
- Vazirani V N, Ratawani M M and Duggal S K. Analysis of Structures, Khanna Publishers. New Delhi
- Lehri R S and Leheri R S. Strength of Materials, S.K.Kataria & Sons, New Delhi.Pandey, P.H. Principles and practices of Agricultural Structures and Environmental Control, Kalyani Publishers, Ludhiana
- Ojha, T.P. and Michael, A.M. Principles of Agricultural Engineering, Vol.1, Jain Brothers, Karol Bag, New Delhi
- Nathanson, J.A. Basic Environmental Technology, Prentice Hall of India, New Delhi
- Garg, S.K. Water Supply Engineering, Khanna Publishers, New Delhi
- Dutta, B.N. Estimating and Costing in Civil Engineering, Dutta & Co, Luc know
- Sahay, K.M. and Singh, K.K. Unit Operations of Agricultural Processing, Vikas pub.pvt. Ltd, Noida