School of Planning and Architecture: Vijayawada
(An institution of National Importance under the Ministry of Human Resource Development, Govt. of India)
S.No. 71/1, NH-5, Nidamanuru, Vijayawada – 521 104, Andhra Pradesh, India

Department of Architecture

Course:	10110605 Steel Structures	**Class:** III Yr B. Arch VI Sem A.Y. 2017-18
Instructors:	Narendra Kumar Adapa	**Internal Assessment:** 50
Contact Periods/ week: 05 periods [2-Lecture & 3-Studio]		**External Theory Exam:** 50
Attendance: Min 75%	**Min. Passing Marks:** 40% each in Internal & External Assessment, 50% in Aggregate	**Credits:** 4
Objective: To inroduce the concept of designing with steel structures and its components		
Out Line of the Course: Steel Connections, Design of steel beams, Design of steel coloumns & Pre-stressed concrete		

LESSON PLAN

S. No.	Week	TOPIC OF CLASS LECTURE & DISCUSSION	CLASS ACTIVITIES & ASSIGNMENTS
1	Week 1	**Inroduction to Steel Structures** Inroduction to steel code IS:800-2007 Steel Structural shapes	**Lecture/ Studio**
2	Week 2	**Design of steel structural members** Tension members compression members & bending	**Lecture/ Studio**
3	Week 3	**Steel Connections** Concepts of connections Design of riveted connections Design of welded connections	**Lecture/ Studio**
4	Week 4	**Design of steel beams** Design of steel columns Concepts of Plate girders	**Lecture/ Studio**
5	Week 5	**Concrete Mix design on idividual interest** **Written Assignment/Exam**	**Lab/ Studio** **ASSESSMENT-I (30%)**
6	Week 6	**Design of Steel Beams** Design of laterally supported beams Design of laterally unsupported beams Beams subjected to bi-axial bending	**Lecture/ Studio**
7	Week 7	**Design of Built up beams** Design concepts with flanged plates	**Lecture/ Studio**
8	Week 8	**Design of steel columns** Theory of columns Senderness ratio	**Lecture/ Studio**
9	Week 9	**Site Visit on Steel structures and Sky scrapers**	
10	Week 10	**Design of axially loaded steel columns** Study on Non-destructive tests on concrete	**Lecture/ Studio**
11	Week 11	**Design of built up lacing columns** **Written Assignment/Exam**	**ASSESSMENT-II** (30%)
12	Week 12	**Design of built up battened columns** Flexural strength of RCC beams	**Lecture/ Studio**
14	Week 13	**Pre-Stressed concrete structures** Principles,materials, classification	**Lecture/ Studio**
13	Week 14	**General information about pre stressing devices** Equipment, analysis for stress	**Lecture/ Studio**

		Simple calculation in design of cross section details	
15	Week 15	**Laboratory experiements** Study of other Non destructive test on Hardeened concrete	**Lecture/ Studio**
16	Week 16	**Final-class written Examination**	**ASSESSMENT-III (40%)** · **Submission of Final Assignment** · **Submission of Brief report of site visit**

S.No.	Category of Evaluation		Note
1	Assessment – I	15	*The Marks allotted at each stage is tentative. Attending all the tests/labs/Assignments/ are mandatory.Categories of evaluation may be increased or decreased (merged) on need-basis*
2	Assessment – II	15	
3	Assessment – III	20	

References:

1. Bhavikatti, S.S(2010). Design of steel structures. I.K.International Publishing House.
2. Duggal, S.K (2000). Design of Steel Structures. Tata McGraw Hill Educatiion.
3. Ram, K.S.S. (2010). Design of Steel Structures. Pearson Education India
4. Shiyekar, M.R. (2011). Limit State design in Structural steel. PHI Learning Pvt. Ltd
5. Subramanian, N. (2008). Design of Steel Stercutures. Oxford University Press.

Signatures of the Instructors: Head of the Department: