A. Course Description

- **Credits:** 3.00
- **Lecture Hours/Week:** 3.00
- **Lab Hours/Week:** 0.00
- **OJT Hours/Week:** 0
- **Prerequisites:** None
- **Corequisites:** None
- **MnTC Goals:** None

This course provides a basic understanding of the structural design for beams, columns and joists in wood, steel and concrete. It emphasizes the nature of frame structures and is intended to provide an architectural technician with the knowledge necessary to work and communicate effectively with a structural engineer.

B. Course Effective Dates: 8/27/12 – Present

C. Outline of Major Content Areas

   As noted on course syllabus

D. Learning Outcomes

1. Define anchor rods, anchorage
2. Define bridging
3. Define compacted non-frost susceptible fill
4. Define composite deck - steel beams, camber, shead studs
5. Define control joints
6. Define different construction types
7. Define expansion joints vs. control joints vs. construction joints
8. Define header studs
9. Define lightweight vs normal weight concrete
10. Define metal roof deck
11. Define mild steel
12. Define moment connections
13. Define pan and joist
14. Define pile foundations, pile caps, battered pile
15. Define pour stops vs bent plate edge of slab
16. Define prestressed, post tensioned and precast concrete
17. Define shear walls and braced frames
18. Define steel joists size designations
19. Define stepped footings, pad footings, continuous footings
20. Define topping
21. Define two-way and waffle slabs
22. Define typical framing details, clip angles
23. Define underpinning
24. Define welding basics and symbols

E. Minnesota Transfer Curriculum Goal Area(s) and Competencies

F. Learner Outcomes Assessment

   As noted on course syllabus

G. Special Information

   None noted