



NEW GRADUATE COURSE: Advanced Design of Steel Bridge Axial Members and Gusset Plate Connections

SPRING 2026 Tu/Th 3:00-4:15 PM HAMP 1113

CE 59700-222 (3.0 Cr) | CRN: 39715 | Prerequisites: CE 371, CE 470, CE 474

Instructed by Francisco Bonachera Martin Ph.D., P.E. | Visiting Professor

COURSE OBJECTIVES

This course provides students with the necessary background to design steel members and connections typically used in truss bridges. The course utilizes FEA software commonly used in steel bridge design to support the fundamentals taught as well as to provide students with practice-oriented examples and exercises.

The first part of the course focuses on the design of axial members subjected to compression or tension. The second part of the course focuses on the design and evaluation of gusset plate connections. The course uses the AASHTO LRFD Bridge Design Specifications and the Manual for Bridge Evaluation.

The course includes a summary review of load distribution analysis in truss bridges to familiarize students with the calculation of demands used in steel bridge superstructure design.

