# Learning Goals

**Students will:**

**Rail Industry Knowledge Base**
- Be familiar with rail system components
- Understand industry terminology
- Understand engineering and operational practices of the rail transportation industry

**Professional Development**
- Gain disciplinary knowledge of rail transportation industry topics
- Apply practical concepts and technologies to industry issues
- Work with design and data analysis of various system components

**Leadership**
- Learn management fundamentals
- Develop problem solving & effective communication skills
- Experience industry mentoring

**Communication**
- Demonstrate effective communication in multiple formats
- Experience opportunities to meet industry leaders and hear from guest speakers

**Industry Safety Culture**
- Understand fundamental processes that are put in place by the rail industry to achieve optimum safety
- Research of new procedures and technologies to further increase industry safety

---

## Rail Transportation Minor (Min. 19 Credits)

**Required Courses (7 Credits)**
- CE 4404 - Railroad Engineering
- CE 3490 - Rail Transportation Seminar
- OSM 4700 - Logistics and Transportation Management

**Leadership Electives (3 Credits)**
- MGT 3100 - Leadership Development
- AF 3010 - Leadership Studies I
- AF 3020 - Leadership Studies II

**Railroad Focus Technical Electives (9 Credits)**

### Civil Track
- CE 3401 - Transportation Engineering
- CE 4333 - Estimating and Planning of Construction Projects
- CE 4407 - Transportation Design
- CE 4905 - Senior Design (Railroad Theme)*
- CE 4990 - Independent Study in Rail Topics*
- CE 5408 - Public Transit
- XX-XXXX A course in rail topics from another University*

### Mechanical Track
- MEEM 3900 - Engineering Design Process
- MEEM 4220 - Internal Combustion Engines I
- MEEM 4450 - Vehicle Dynamics
- MEEM 4901/4902 - Senior Capstone Design (Railroad Theme)*
- MEEM 4990 - Independent Study in Rail Topics*
- XX-XXXX A course in rail topics from another University*

### Electrical Track
- EE 3120 - Electric Energy Systems
- EE 4219/4220 - Intro to Electric Machinery and Drives with lab
- EE 4227/4228 - Power Electronics with lab
- EE 3160 - Signal Systems
- EE 3171 - Microcontroller Applications
- EE 3261 - Control Systems
- EE 4252 - Digital Signal Processing and Applications
- EE 4253 - Real Time Signal Processing
- EE 4900 - Special Topics with Railroad Focus
- EE 4901/4910 - EE Design Project with Railroad Focus
- XX-XXXX A course in rail topics from another University*

---

* An independent study, project, or a senior or enterprise design course with a railroad focus in the student’s major discipline, or a course in rail topics from another university may be substituted for one of the Railroad Focus courses with prior written approval by the Director, Rail Transportation Program.