



Course Syllabus
CE4490 – Rail Transportation Seminar
College of Engineering
Spring 2017

Instructor Information

Instructor: Pasi Lautala, PhD, P.E., Assistant Professor
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Office Hours: Tue, 2-4 pm, Thu, 9-11 a.m. or by appointment

Course Identification

Course Name: Rail Transportation Seminar
Course Location: 315 Dillman Hall (DOW 642 in some weeks)
Class Times: T 4:05-4:55 p.m.
Prerequisites: None

Course Description/Overview

The course covers presentations and discussion of both current literature and research & development related to rail transportation. It will mix industry and academic presentations with reading assignments; topics will be selected jointly between the course members during the first week of semester. Students will also conduct team research in a selected topic area and make a presentation to the class on the topic.

Course Learning Objectives

Course has three key goals:

- 1) Introduce students to new technology, research and development in the railway industry.
- 2) Provide students with an opportunity to research and present in a topic of their choice.
- 3) Provide student with an opportunity to use their critical thinking skills when preparing questions and feedback on railway seminar presentations.

ABET Requirements addressed by the course

- 1) an ability to function on multi-disciplinary teams
- 2) an ability to communicate effectively

- 3) the broad education necessary to understand the impact of engineering solutions in a global and societal context
- 4) a knowledge of contemporary issues

Course Resources

Course Website(s)

- Canvas <http://www.courses.mtu.edu>

Required Course Text

- No required text.
- Selected texts from various sources will be identified and provided by the instructor during the course, either in class or through the canvas course site. Students are encouraged to look for additional information from internet and other sources provided by the instructor. The Rail Library in the CN Rail Transportation Education Center is also an excellent source of railway related materials.

Grading Scheme

Grading System

Letter Grade	Percentage	Grade points/credit	Rating
A	93% & above	4.00	Excellent
AB	89% – 93%	3.50	Very good
B	85% – 89%	3.00	Good
BC	80% – 84%	2.50	Above average
C	75% – 80%	2.00	Average
CD	70% – 75%	1.50	Below average
D	64% - 70%	1.00	Inferior
F	63% and below	0.00	Failure
I	Incomplete; given only when a student is unable to complete a segment of the course because of circumstances beyond the student’s control. A grade of incomplete may be given only when approved in writing by the department chair or school dean.		
X	Conditional, with no grade points per credit; given only when the student is at fault in failing to complete a minor segment of a course, but in the judgment of the instructor does not need to repeat the course. It must be made up within the next semester in residence or the grade becomes a failure (F). An (X) grade is computed into the grade point average as an (F) grade.		

Grading Policy

Grades will be based on the following:

Attendance, Participation and weekly assignments	60%
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Seminar presentation	40%
Total Percentage	100%

The grading of the class will incorporate following methods.

- There will be no tests during the course, but weekly attendance and participation are required. In-class quizzes may be used to assess participation in the presentations or reading assignment. On-line discussions and reflections in Canvas will also be a component in some weeks. Attendance and active participation during the class/Canvas assignments will form 60% of the grade.
- There will be one team presentation during the course. The presentation will be judged by other course participants and external judges and will form the other 40% of the grade

Course Policies

Any absence from the class must be discussed in advance; absence without permission will negatively affect the participation portion of the grade. Teams are expected to solve potential conflicts internally and are advised to approach the instructor for conflict resolution only when internal efforts haven't been effective.

Collaboration/Plagiarism Rules

Collaboration on individual and group assignments is **recommended**.

Cell phones, Blackberries, iPods, PDAs, or any other electronic devices are not to be used in the classroom. Please make sure to bring a calculator with you to class. Calculators on other devices are strictly prohibited. Information exchanges on these devices during class are also prohibited and violate the Academic Integrity Code of Michigan Tech.

University Policies

Academic regulations and procedures are governed by University policy. Academic dishonesty cases will be handled in accordance the University's policies.

Academic Integrity:

<http://www.mtu.edu/dean/conduct/policy/academic-integrity/>

If you have a disability that could affect your performance in this class or that requires an accommodation under the Americans with Disabilities Act, please your instructor as soon as possible so that we can make appropriate arrangements.

Disability Services:

<http://www.mtu.edu/dean/disability/policies/>

The Affirmative Action Office has asked that you be made aware of the following:

Michigan Technological University complies with all federal and state laws and regulations regarding discrimination, including the Americans with Disabilities Act of 1990. If you have a

disability and need a reasonable accommodation for equal access to education or services at Michigan Tech, please call the Dean of Students Office at 487-2212. For other concerns about discrimination, you may contact your advisor, Chair/Dean of your academic unit, or the Affirmative Programs Office at 487-3310.

Affirmative Action:

<http://www.admin.mtu.edu/aao/>

Equal Opportunity Statement:

<http://www.admin.mtu.edu/admin/boc/policy/ch5/>

Course Schedule

Tentative content: Approx. 14 hrs of lectures (lecture topics may be reorganized or changed as deemed necessary)

Week	Date	Activity
Week1	1/10	Introductions and Rail Magazines at CN RTEC
Week 2	1/17	Railroads as part of Transportation System
Week 3	1/24	History of Rail Transportation
Week 4	1/31	Freight Rail Today
Week 5	2/7	Passenger Rail Today
Week 6	2/14	Importance of Safety in Rail Transportation
Week 7	2/21	Railroad Organizations/Careers through Rail Information Night (no class)
Week 8	2/28	Rail System Components
Week 8.5		Spring Break, Don't get derailed!!
Week 9	3/14	Railroad Track
Week 10	3/21	Rolling Stock
Week 11	3/28	Signals and Communications
Week 12	4/4	Railroads - Sustainable Mode of Transportation?
Week 13	4/11	Technologies in Rail Transportation
Week 14	4/18	Student presentations Student teams provide 10-12 minute research presentations on selected topics.

