

RTE 302 Railroad Track Location, Construction, and Maintenance

Spring 2015

Class Location: 261 Hawthorn
Meeting Times: MWF (2:00-2:50 PM) R (2:40 – 5:30 PM)
Instructor: Dr. Hai Huang
Office Address: 103G Sheetz H&W Center
Phone: 814-949-5346
E-mail: huh16@psu.edu
Office Hours: by Appointment

Safety:

- Safety is a shared responsibility in which each member of the University community has a personal role.
- Each of us should know the appropriate actions to take when an emergency arises.

Course Description:

- *Railroad track* is one of the most critical components in railroad transportation. It is intended to give students a thorough understanding of all the track components and their structural roles. After this course, students will be able to design a railroad line based on economical, structural, and environmental considerations. They will also be exposed to regular railroad maintenance technologies. This course has a lecture session and a group discussion session during which topics related to railroad infrastructure will be discussed. Multiple field trips will be also arranged throughout the semester.
- Topics covered include: 1) Introduction of Track, 2) Subgrade, Ballast, and Drainage, 3) Ties, 4) Rail, 5) F&OTMs, 6) Train Track Interaction, 7) Track Structural Design, 8) Special Track Works, 9) Track Location Process, 10) Track Standards and Regulations
- RTE302 covers the ABET outcomes *c*, *e*, and *h*
 - *(c) an ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability*
 - *(e) an ability to identify, formulate, and solve engineering problems*
 - *(h) the broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context*

Required Textbook:

- Hay, W. W., Railroad Engineering, Second Edition, Wiley and Sons, 1982.

Grading Policy:

- Individual Assignments and Group Projects 40%
- Two Preliminary Exams @ 20% each 40%
- Final Exam 20%
- Total: 100%

- Course grades will be assigned on the following scale.

93% - 100%	A	87% - 89%	B+	77% - 79%	C+	67% - 69%	D+
90% - 92%	A-	83% - 86%	B	73% - 76%	C	60% - 66%	D
		80% - 82%	B-	70% - 72%	C-	< 60%	F

Homework and In-Class Assignments:

- Homework will be assigned and collected in class at the start of the following class period.
- No late homework will be accepted.
- Homework assignments will be equally weighted.
- Several in-class assignments, each worth 1/3 of a homework assignment, may be given during the semester.
- Students are **encouraged** to work together on assignments.
- However, each student must do and submit his own work.

Exams:

- Two preliminary exams, each worth 20% of your course grade, will be given during the semester.
- Preliminary Exams will be in-class, **CLOSE** book exams.

Academic Integrity:

- All members of the University community share responsibility for maintaining and promoting the principles of truth and academic honesty.
- Cheating or plagiarism in any form will not be tolerated. Cheating includes, but is not limited to, copying work or allowing your work to be copied. Plagiarism includes copying solutions from the solution manual and resubmitting previously graded homework from a previous semester, even if it was your own work.
- If academic dishonesty has occurred on any homework, test or other assignment, the incident will be reported and the student(s) involved will receive no credit (a score of zero) for that particular material.

Penn State Altoona's statement on academic integrity is as follows:

Statement on Academic Integrity

Definition and Expectations

Academic integrity is the pursuit of scholarly activity in an open, honest and responsible manner. Academic integrity is a basic guiding principle for all academic activity at The Pennsylvania State University, and all members of the University community are expected to act in accordance with this principle. Consistent with this expectation, the University's Code of Conduct states that all students should act with personal integrity, respect other students' dignity, rights and property, and help create and maintain an environment in which all can succeed through the fruits of their efforts.

Academic Integrity includes a commitment not to engage in or tolerate acts of falsification, misrepresentation or deception. Such acts of dishonesty violate the fundamental ethical principles of the University community and compromise the worth of work completed by others.

To protect the rights and maintain the trust of honest students and support appropriate behavior, faculty and administrators should regularly communicate high standards of integrity and reinforce them by taking reasonable steps to anticipate and deter acts of dishonesty in all assignments. At the beginning of each course, it is the responsibility of the instructor to provide students with a statement clarifying the application of University and College academic integrity policies to that course.

Consequences of Academic Dishonesty

The penalty for academic dishonesty in less serious cases may consist of a failing grade for the course. The decision is made by the instructor. In more serious cases of academic dishonesty, the penalties may be more severe, including automatic failure for the course, and referral to the Office of Judicial Affairs for disciplinary action. Formal due process procedures are available for the students and faculty involved. The Student Guide to University Policies and Rules provides the details on these procedures.

Notes to Students with Disabilities:

Penn State welcomes students with disabilities into its educational programs. If you have a disability-related need for modifications or reasonable accommodations in this course, please contact the Health & Wellness Center, Disability Services, located in the Sheetz Family Health Center. For more information, call (814) 949-5540 or visit the Disability Services web site at www.altoona.psu.edu/healthwellness. Your instructors should be notified as early in the semester as possible regarding the need for modifications or reasonable accommodations.