



How to Read and Interpret a Gear Inspection Report (8hr Training)

INSTRUCTOR:

William 'Mark' McVea

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COURSE INFORMATION

Course Description:

This new and expanded one-day online course is intended to provide you with a thorough understanding of the attributes of a gear and its design are critical to ensure the required operation and function of the gear system as expected. The features and attributes of importance to function of the gear system will be discussed and explained in terms of how to measure and inspect them. We will cover measurement techniques and inspection interpretations as a precursor to the operation of a Gear Measurement Machine (GMM). We will also explore the differences and similarities between a GMM and Coordinate Measurement Machine (CMM).

Building on the objectives of measurement and inspection techniques, we will transition to reading and interpreting a typical gear inspection report. Specifically, we will look at the contents and meaning of the information contained within the gear charts on the drawings, as well as the techniques used by the gear measurement system to assess gear quality. An explanation of basic gear measurement techniques, how measurement equipment and test machines implement these techniques, and how to interpret the results from these basic measurements will be covered. We will also discuss how to interpret the results and what corrective actions may be considered if the quality of a particular gear is unsatisfactory.

It is recommended that you spend a minimum of 1 hour reading and reviewing the material each day.

Who Should Attend:

This course can be for anyone working with or interested in learning about gear charts. Prior to attending this course it would be helpful if you were familiar and conversant with the AGMA Nomenclature standard and the Fundamentals of Gearing resource, both of which are readily available to anyone and free to AGMA members.

Learning Objectives:

- Describe the measurement and inspection techniques used to qualify a gear
- Explain the major contributing factors to gear quality
- Describe in detail the practical gear measurement and inspection techniques
- Categorize the common tools and equipment used to measure and inspect gears
- Discuss some of the new and automated gear design systems

Required Textbook (Provided by AGMA):

AGMA's EV Gearbox Concepts, Design, and Development Considerations, by William Mark McVea

STUDENT FEEDBACK AND GRADING PROCEDURES

Assignments

There will be a short self-graded quiz at the end to show knowledge transfer.

COURSE MANAGEMENT

Weather Delays and Cancellations

We will communicate any cancellations, delays or other concerns for safety prior to class via email, voicemail, and/or text message. Please be sure that we have all pertinent contact information as you travel to your class location.

Attendance for Domestic and International Students

Please be mindful that these are short, accelerated courses. Attendance is extremely important. If you are going to be absent from any class day, please contact the course coordinator.

Plagiarism, Cheating and other types of Misconduct

Plagiarism¹, cheating and other types of misconduct are unacceptable.

Students with Disabilities

Students requiring assistance and accommodation should complete the [Special Accommodation Request form](#) and submit it to Stephanie Smialek, Education Manager at smialek@motionpower.org. She can be reached at 773-302-8026.

Grievance Procedures

Students who have concerns about the class are encouraged to contact Stephanie Smialek, Education Manager, at smialek@motionpower.org or 773-302-8026.

Outline Changes

The instructor reserves the right to modify the outline during the course of the class.

LEARNING AND OTHER RESOURCES

Links for writing resources:

- grammar.ccc.commnet.edu/grammar
- www.merriam-webster.com

Links for Math resources:

- www.sosmath.com
- Khan Academy on www.youtube.com

Links for time management, study skills and note taking resources:

- www.mindtools.com
- www.testtakingtips.com

Links for career resources:

- <https://www.agma.org/newsroom/jobs/>

¹ Plagiarism is defined as "the use or close imitation of the language and thoughts of another author and the representation of them as one's own original work."

Industry News:

- <https://www.agma.org/newsroom/industry-news/>