

Basics of Magnetism
A Two Day Course

Target audience: Engineers, Technicians and Management personnel who work with permanent magnets and would like to learn more about these materials: how they are produced, characterized and used.

Format: Interactive lecture with demonstrations, either in-person or as a webinar

Generic Course Outline

1. Overview
2. What we learned in 1st Grade
3. Magnetic Theory
 - a. Hysteresis
 - b. What is magnetism?
 - c. Units and conversions
4. Electromagnetism
 - a. Field from a current
 - b. Coils
 - c. Connection to permanent magnets
5. Magnetic materials
 - a. Ferro-, ferri- and para-magnetism
 - b. Soft materials
 - c. Hard materials
 - d. Processing
 - e. Self-demagnetization
 - f. Thermal effects
 - g. Corrosion
6. Magnetic circuit design
 - a. Philosophy
 - b. Design principles
 - c. Permeance & load line
 - d. Analytical methods
 - e. Finite Element Analysis
7. Magnetic Testing
 - a. Magnetizing
 - b. Measurement techniques
8. Magnet Specification
9. New materials
10. Conclusions
 - a. Bibliography
 - b. Final questions

While I have used this outline for many training classes, it is important to recognize that each client has varying needs. We adapt the topics of each presentation to address the specific needs of each client, so please consider this outline to be the starting point of a discussion that ultimately leads to a personalized course just for your organization.

For more information, please contact

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