

# SYLLABUS

## Course Information

PHYS 380 — Practicum in Problem Solving — Spring 2015, Location: Workman 310  
Lecture time: Monday 14:00-16:00

|**Professor:**.....Dr. David Meier, Workman 359  
| Tel: 835-5340, email: [dmeier@nmt.edu](mailto:dmeier@nmt.edu) (preferred),  
|**Office Hours:**.....M: 17:00 - 18:00; F: 14:00 - 16:00 or by appointment

|**Class Webpage:**..... [kestrel.nmt.edu/~dmeier/phys380/phys380.html](http://kestrel.nmt.edu/~dmeier/phys380/phys380.html)  
| (if necessary)

|**Recommended Text:**.....*Not applicable*

### |**Goals / Learning Outcomes:**

Program mission / learning outcomes are available at the top of the main NMT physics webpage. The goal of this particular class is to develop your problem solving skills. The course will be run with a focus on developing skills in solving GRE physics style problems across a range of physics disciplines. However we will include other famous/broader perspective problems from modern topics in physics where applicable. Occasionally lectures will include broader scoped discussions related to professional development. The structure of the class will be kept free-form enough to allow adaptation to the needs of the students.

By the end of class it is expected that:

- Students will be able to successfully apply test-taking strategies to multiple-choice GRE-type problems to improve test-taking skill and speed.
- Students will be able to identify important principles in physics by creating focused GRE questions and presenting their solutions.
- Students will have identified gaps in their physics education that can be addressed by future class selection.

### |**Workload/Grading:**

Typically a class will include a period of time where we solve selected problems, discussing methodology and potential generalization/extensions. Students are expected to contribute problems and solutions to each meeting. The topics available are Classical Mechanics\*, Electricity & Magnetism\*, Optics & Waves, Thermodynamics & Statistical Physics\*, Quantum Mechanics\*, Atomic Physics, Relativity, Laboratory Methodologies, Nuclear Physics and Special Topics (Astrophysics/Condensed Matter). Following the group problem solving session, a short test taking exercise on related topic will given to students individually. Finally the students and professor will go over solutions to the test taking exercise. Other than selecting problems minimal work outside lecture is expected.

Grading will be on an S/U basis and will be based primarily on active participation and effort on contributed problems. Problem solving success will factor in at only a very modest level.

### |**Academic Dishonesty:**

The test taking exercise will be done on an individual basis and are subject to the academic standards/penalties outlined in the Student Handbook and Undergraduate Catalog (pg. 59-70)

([http://www.nmt.edu/images/stories/registrar/pdfs/2013-2014\\_UNDERGRADUATE\\_Catalog\\_FINAL.pdf](http://www.nmt.edu/images/stories/registrar/pdfs/2013-2014_UNDERGRADUATE_Catalog_FINAL.pdf)).

Please familiarize yourself with the policy. You will be held to it.

**|Disability Statement:**

New Mexico Tech is committed to protecting the rights of individuals with disabilities. Qualified individuals who require reasonable accommodations are invited to make their needs known to the Office of Counseling and Disability Services (OCDS) as soon as possible. New Mexico Tech offers mental health and substance abuse counseling through the Office of Counseling and Disability Services. The confidential services are provided free of charge by licensed professionals. To schedule an appointment, please call 835-6619.