

PHYS1402 - College Physics II

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| Credits: | 4 (3/1/0) |
| Description: | Meets MnTC Goal Area 3. This course is open to all students and gives a theoretical and practical introduction to physics. It is a continuation of Physics 1401, College Physics I. However, it may be taken without having taken Physics 1401. Topics include thermodynamics, selected topics in electricity and magnetism, DC and AC circuit theory, light and electromagnetic radiation, atomic physics, spectroscopy, lasers and photonics, and nuclear physics. Lab equipment is used to illustrate these concepts. A mastery of college algebra and some trigonometry is essential for success in this course. Lab is required. Physics 1402 is intended for all students but especially designed for students majoring in forestry, biological sciences, dentistry, pharmacy, veterinary medicine, physical therapy and other fields related to medicine. |
| Prerequisites: | <ul style="list-style-type: none"> • MATH1116 OR • MATH1118 OR • MATH1115 |
| Corequisites: | |
| Pre/Corequisites*: | |
| Competencies: | <ol style="list-style-type: none"> 1. Demonstrate an understanding of scientific theories and the scientific method. 2. Demonstrate an understanding of the theories and topics described in the course description. 3. Demonstrate significant proficiency with the use of algebra and trigonometry to manipulate and analyze equations of physics. 4. Demonstrate the ability to express numerical uncertainty in a result and recognize sources of error in measurements. 5. Demonstrate the ability to use dimensional analysis for problem-solving. 6. Effectively communicate by writing detailed solutions to physics problems. 7. Analyze many different physics word problems, translate them to a mathematical form, solve them and communicate the result in writing. 8. Demonstrate an understanding of the hypothesis or physical principal that is measured or illustrated in a lab experiment. 9. Make informed decisions about alternative ways to acquire data. 10. Actively participate with the lab group. 11. Perform experiments and record measurements. 12. Report a result for the lab experiment. |
| MnTC goal areas: | 3. Natural Sciences |

**Can be taking as a Prerequisite or Corequisite.*

