

THE 2020 DRAKE PHYSICS PRIZE

The Department of Physics and Astronomy at Drake University takes great pleasure in announcing the 2020 Drake Physics Prize Examination. Since 1970, we have been offering this scholarship opportunity to encourage interest in physics, astronomy, and physical sciences, and to give recognition to outstanding high school students. The awards are:

First place: an unrestricted four-year, **full-tuition** scholarship to Drake University, a personal trophy, and the Drake Physics Trophy (to be retained in the high school of the winner for display during the following year).

Second place: personal trophy

Third place: personal trophy

Honorable mention: certificate of achievement (awarded to the next 25 placers)

Top 50 seniors: an invitation to apply for a second four-year, full-tuition scholarship, restricted to physics or astronomy majors, to be awarded based upon overall academic record, recommendations, and an interview to be conducted at Drake in April. The runner-up will receive a smaller scholarship, depending on the available funds.

The Drake Physics Prize Test is primarily given to students in Iowa, Minnesota, Nebraska, South Dakota, North Dakota, and select areas in Illinois, Texas, and Colorado. Students outside of these areas are also eligible to participate, but should contact the Drake Physics Department at 515-271-3141 or ashlyn.hardin@drake.edu. The test will cover topics in physics that would normally be studied by students during the **first semester** of their high-school physics course: kinematics, dynamics (Newton's laws), circular motion, universal law of gravitation, harmonic motion (simple pendulum and mass-spring systems), impulse, linear momentum, conservation of momentum and collisions, work, energy and conservation of energy, torque, rotational kinematics, dynamics and energy, angular momentum conservation, mechanical waves, and sound. The principal of each participating school, or his/her delegate, is asked to supervise (proctor) the objective-type examination, which should be taken at the school at a specified time between Wednesday, February 5, and Friday, February 7, 2020. The precise date and time may be chosen to accommodate the students. However, we require that all students at a particular school take the test at the same time and place.

The test will be administered on the Internet. It is given in two parts. Part I is multiple choice with no partial credit. Part II is composed of more complicated multiple-choice problems for which, however, partial credit may be given. Students should write their solutions for Part II on 8 ½ x 11 paper. These solutions should be mailed to our department by the proctor (original by standard mail or electronic copy by email). A report of the results will be sent as soon as the grading is completed.

The proctors who will administer the test should fill in their information on the proctors' registration page:

<https://tinyurl.com/DrakePhysicsPrizeProctor2020>

Students wishing to take the test should register online by **1:00 pm, Monday, February 3, 2020**. The link to the students' registration page is:

<https://tinyurl.com/DrakePhysicsPrizeStudents2020>

The above links can also be reached through the Drake Physics and Astronomy home page:

<http://www.drake.edu/physics/>

Further instructions for registered proctors and students and a practice test will be sent by email. For questions or concerns, please email the department at ashlyn.hardin@drake.edu or call (515) 271-3141. All correspondence should be addressed to: The Drake Physics Prize, Department of Physics and Astronomy, Drake University, Harvey Ingham, 2507 University Ave., Des Moines, Iowa 50311.

Yours sincerely,



Dr. Klaus Bartschat, Director

Department of Physics and Astronomy, Drake University

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Test with an online and a written part on February 5, 6, or 7, 2020

- First place:** an unrestricted four-year, **full-tuition** scholarship to Drake University, a personal trophy, and the Drake Physics Trophy (to be retained in the high school of the winner for display during the following year).
- Second place:** personal trophy
- Third place:** personal trophy
- Honorable mention:** certificate of achievement (awarded to the next 25 placers)
- Top 50 seniors:** an invitation to apply for a second four-year, full-tuition scholarship, restricted to physics or astronomy majors, to be awarded based upon overall academic record, recommendations and an interview to be conducted at Drake in April. The runner-up will receive a smaller scholarship, pending on the budget.

The test is on first-semester high-school physics: kinematics, dynamics (Newton's laws), circular motion, universal law of gravitation, harmonic motion (simple pendulum and mass-spring systems), impulse, linear momentum, conservation of momentum and collisions, work, energy and conservation of energy, torque, rotational kinematics, dynamics and energy, angular momentum conservation, mechanical waves and sound. Students wishing to take the test should register online by **1:00 pm on Monday, February 3, 2020**. The students' registration page is:

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Study at Drake University: Atomic Physics, Biophysics, Nuclear Physics, Particle Physics, Astronomy, Astrophysics, Engineering in collaboration with Washington University.
Bachelors of Science and Bachelors of Arts.

Very small classes – Research - Success in graduate schools – Many career options.

