

Instructional Development (ID) Grant Application

Name(s): Marc Tiritilli

Department(s) or School(s): Physics

Course(s): PHYS 110

A) Is this your first ID grant application? ☒ •Yes ☐ •No

B) If your proposal is funded, would you be willing for the Thorpe Center to use it as an exemplary submission in the online Handbook? ☒ •Yes ☐ •No

Please complete the following checklist by placing a check mark against each item to ensure that your application is complete. Incomplete applications will be returned to the applicant without further consideration.

- ☒ 1. Detailed description (1-2 pages, Times or Times Roman, 12 point)
- ☒ 2. Budget Page



Applicant's signature

1/20/26

Date



Supervisor's signature

(*indicates that the requested funds are not available from the department)

²⁶
1/20/20

Date

Please itemize your estimated expenses below (Note: maximum allowance = \$500). Include a description of each of the expenses in your 1-2-page narrative. If you are requesting books or videos, please provide specific titles and approximate costs.

[illegible]

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Dear Instructional Development Grant Committee,

I am writing to request support from the Instructional Development (ID) Grant program to purchase three pairs of Celestron SkyMaster 25x70 binoculars for use in the astronomy curriculum at Illinois Wesleyan University. These binoculars will be used primarily in PHYS 110, which primarily serves non-science majors and fulfills a general education PSL requirement. The proposed purchase will enhance hands-on observational experiences, strengthen conceptual understanding of core astronomical ideas, and promote active, inquiry-based learning outside the traditional classroom.

Current Course Structure and Pedagogy

Introductory astronomy is presently delivered through a combination of lectures, discussions, and occasional observational activities. The course emphasizes conceptual understanding of celestial motions, lunar phases, the nature of planets and stars, and the structure of the universe. While lectures and simulations are effective for introducing theoretical ideas, students often struggle to connect abstract concepts—such as angular size, brightness, parallax, and celestial coordinates—to the real night sky. Many students enter the course with limited prior experience observing astronomical objects directly, and a significant pedagogical challenge is helping them develop an intuitive, observational understanding of the sky.

At present, observational assignments are limited by access to equipment. While the department has some telescopes, their setup time, scheduling constraints, and learning curve can make them impractical for short activities or introductory observations. As a result, many observational exercises rely on planetarium software rather than direct sky viewing. Although such software is valuable, it cannot fully substitute for real-world observing experiences, particularly for students encountering astronomy for the first time.

Proposed Use of Funds

I propose to use ID Grant funds to purchase three pairs of Celestron SkyMaster 25x70 binoculars. These binoculars are well-suited for educational astronomy: they provide bright, wide-field views of the Moon, star clusters, nebulae, and planets, while remaining intuitive and accessible for novice observers. Unlike telescopes, binoculars require minimal setup, are easy to share among students, and allow learners to orient themselves naturally with the sky.

The binoculars will be incorporated into multiple components of the course. First, they will support structured evening observing sessions in which students work in small groups to observe lunar phases, Jupiter's moons, star clusters such as the Pleiades, and prominent constellations. These activities directly reinforce course topics such as orbital motion, phases, angular measurement, and stellar brightness. Second, the binoculars will be used for informal, low-stakes observational assignments in which students make repeated observations over several nights, encouraging sustained engagement with the sky and reinforcing the dynamic nature of celestial phenomena. Finally, the binoculars will be available for in-class demonstrations and campus outreach events, further extending their instructional impact.

Pedagogical Impact and Lasting Value

The addition of binocular-based observing will significantly improve student learning by grounding abstract concepts in direct experience. Research in physics and astronomy education consistently shows that hands-on, experiential learning improves conceptual retention and student confidence. By allowing students to see for themselves how celestial objects move and change over time, the binoculars will help bridge the gap between mathematical or graphical descriptions and physical reality.

The proposed purchase represents a durable, long-term investment in the astronomy program. These binoculars can be reused across multiple semesters and adapted for different courses or outreach activities. Their simplicity ensures that future instructors can integrate them easily into a variety of pedagogical approaches without extensive training or additional costs. In this way, a modest one-time expense will have a lasting instructional impact well beyond a single course offering.

Budget Description

The requested funds will be used to purchase three pairs of Celestron SkyMaster 25x70 binoculars. This model was selected for its educational suitability, durability, and cost-effectiveness. No additional accessories or ongoing expenses are required. Celestron is a name-brand manufacturer that has been around for over 50 years. Our main telescope is also from Celestron. The binoculars will be stored and maintained by the department and made available for repeated instructional use. These binoculars cost \$139.95 apiece.

Conclusion

The Instructional Development Grant program is ideally suited to support this proposal. A relatively small expenditure will meaningfully enhance pedagogy, expand experiential learning opportunities, and deepen students' engagement with astronomy. By enabling more frequent and accessible observing activities, these binoculars will help students move beyond passive learning and develop a direct, personal connection with the night sky.

Thank you for considering this request. I appreciate CETAL's ongoing support for innovative and effective teaching at Illinois Wesleyan University.

Sincerely,

A handwritten signature in black ink, appearing to read 'Marc Tiritilli', with a long horizontal flourish extending to the right.

Marc Tiritilli