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Bringing Makerspace Pedagogy Into The Studio Physics Classroom: A Case Study at Fraser International College

Thursday 12 June 2025 13:30 (30 minutes)

As part of the redesign of the calculus-based mechanics course PHYS 140 -Studio Physics - Mechanics and Modern Physics offered both at Simon Fraser University (SFU) and Fraser International College, a collaborative final project (CFP) was introduced into the course. At the group level, students are responsible for designing, building, and testing a project of their choosing. At the class level, the groups bring their projects together to be assembled in the form of a Rube Goldberg machine. The CFP is designed for students work together within their groups, but also to collaborate with members of other groups on matters of theme selection, project coordination, and peer review. Students are encouraged to bring their creativity, curiosity, and individual strengths to their work, provided that they engage critically with the course content throughout their project. In the building phase, students are introduced to the makerspace at the SFU Library, which provides tools such as 3D printers and laser cutters. These tools allow students to bring their ideas to life, which in turn presents an opportunity for them to explore the affordances and limitations of the models studied in class through their creations. In this talk, I will review how students use the makerspace to facilitate construction of the final project and discuss how the principles of makerspaces - projects, peers, passion, and play -complement the student-centred approach of the studio physics curriculum. I will outline how this approach reveals new opportunities for hands-on learning and design-based projects within the studio physics context. Lastly, I will highlight some of the students' creations and share their personal experiences and reflections on their projects.

Keyword-1

makerspaces

Keyword-2

studio physics

Keyword-3

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