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Optics for Biophysics: An Interdisciplinary course in Optics for Physicists and Life Science Students

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Optics is an applied sub-field of physics that life science researchers utilize daily. Indeed, one cannot open a biological science research journal without seeing five beautiful images of cells. To bridge the gap and educate more life science students in the field of physics, I have developed a new course called “Optics for Biophysics,” an interdisciplinary course engaging students from physics, chemistry, life science, and engineering. The course is a team-based learning or studio physics approach combined with a semester-long project. Mini-lectures of 20 minutes are given before students do hands-on group work to understand the concepts. In the project, the students design and build a modern transmitted light microscope. The final aspect of the project is to build a unique module onto the microscope to address a specific biological question.