

Dr. Peter Bermel aims to inspire students to succeed through teaching and mentoring at the undergraduate and graduate levels. These efforts incorporate fundamental principles, real-world problems, new research findings, active learning techniques, and personalized mentoring. This approach allows him to achieve continuous improvement over time in both the content and impact of his courses on students.

For undergraduate classes, Dr. Bermel has instructed large numbers of students at the sophomore level in the fundamentals of Linear Circuit Analysis, ECE 20100 and ECE 20200 – a total of 443 to date. More recently, he has taught approximately 80 junior students per semester in Semiconductor Device Fundamentals, ECE 30500, and Electric and Magnetic Fields, ECE 31100. While teaching these classes, he has mentored many students to aid in their professional development to prepare for graduate school or industry. Through participation in active teaching workshops, as well as becoming an IMPACT teaching fellow, he has also developed advanced techniques to redesign his courses, which he has implemented on a recurring basis. As a result of these efforts, he has achieved high instructor and course ratings of 4.8 and 4.9 in recent semesters. Undergraduates expressed their enthusiasm for his teaching efforts in ECE 30500 through their final course survey responses as follows: “Thanks Prof. Bermel for the semester! I thought Prof. Bermel was a great instructor, he went over everything in the course thoroughly and he was always available for outside help.” They added that “[m]y instructor did a fantastic job explaining concepts,” and “he clearly shows passion for the subject and makes it a point to relate the material to real life situations, which makes the topic more relatable and I’m more eager to learn.”

Outside of class, he has mentored undergraduate students to develop their professional capabilities. His specific efforts include giving 11 talks to undergraduate groups such as the OSA/SPIE Joint Purdue Student Chapter; creating 17 special long-term projects for students to apply what they learn in the classroom; advising students on their career options after graduation, which has led him to write over 30 unique recommendation letters for graduate studies; and encouraging a select handful to pursue ambitious goals for national and international recognition through the National and International Scholarships Office (NISO). In his work with NISO, he individually mentors outstanding students to develop their full potential and successfully compete for prestigious national and international scholarships, particularly the Churchill Fellowship and the Gates-Cambridge Scholarship. Key outcomes include successfully mentoring two individuals who subsequently won the Churchill Fellowship, one student who became a Gates-Cambridge International Scholar, and two additional Churchill finalists over the past five years.

In graduate classes, Dr. Bermel closely integrates the latest research in his field into his teaching, since a strong understanding of the current state-of-the-art is essential for student success at this level. In particular, key aspects of the theoretical physics and numerical simulation techniques bearing on his research field have underpinned his development of four novel classes on Numerical Simulations, Food and Energy Farms, Nanophotonic Modeling, and Fiber Optic Communications. The latter two are now being offered both live and online, as part of the Purdue ECE fully-online Master’s program. His graduate teaching feedback and ratings are very strong overall, since these classes consistently benefited students in their research efforts. One student summarized how Dr. Bermel’s current teaching approach aligns with the expectations of Purdue graduate students in his online course evaluation as follows: “Having the course texts be available free online was a big help. Being able to email homework for submission was also very convenient. Also, being given a clear rubric for grading of the final project was excellent.”

In summary, Dr. Bermel is very devoted to teaching and mentoring efforts at the undergraduate and graduate levels. He has been successful in inspiring hundreds of students to go beyond their expectations to achieve greater levels of success, from wherever they started.