

1145-N1-2779 **P. P. Yu***, 501 Westminster Ave., Fulton, MO 65251. *Not so fearful symmetry – how “partition of unity” works for teaching First-Year Seminar.* Preliminary report.

Unlike regular mathematics classes, First-Year Seminar provides an ideal platform for the instructor to organize course material in a creative, flexible, yet coherent manner. The theme of my section of the Seminar is “Not so fearful symmetry”. Guided by concrete examples arising from quantum computing, black hole geometry, topological insulators, etc., fundamental concepts in group theory and low-dimensional topology acquire flesh. Freshmen with minimum mathematical background gain tangible understanding through hands-on exercises in a collaborative learning environment. In turn, the unique style of this course enables me to use the topic as a vehicle for their scholarly as well as social developments.

In this talk, I will share my experience of running a section of First-Year Seminar for a primarily STEM-oriented audience. More specifically, I will go over the structure and logistics of the course, detail major learning goals and how I managed to lead the class towards achieving them. Along the way, I will highlight what I find to be effective pedagogical techniques and activities engaging students in mathematics, physics, and engineering. For assessment, I will present indicators of success and reflect on areas that deserve further improvement. (Received September 25, 2018)