# Peer Instruction

***What is it?***

*Peer instruction* is a well-researched active-learning technique that has been widely adopted in college STEM classes. Peer Instruction engages students during class through activities that require each student to apply the core concepts being presented, and then to explain those concepts to their fellow students. Peer instruction can vary in its level of formality: students might be asked to take turns explaining a single concept to a few students close to them for a few minutes, or they could be put in groups and each be given several minutes to explain one concept from a set related topics, so that as a group they cover a large amount of course material.

***Why should I use it?***

Peer instruction can improve students' conceptual understanding and problem-solving skills, an effect that has been observed in multiple disciplines, in courses at different levels, and with different instructors (for a review, see Vickrey et al., 2015). Student response to peer instruction is generally positive; students report that the technique helps them learn course material and that the immediate feedback it provides is valuable.

***How do I implement it in my engineering course?***

- Give clear instructions about your expectations for how students will take turns instructing their peers, and be clear about how much time they will have for the activity.
- Specify whether or not you want them to use their textbook and/or notes during the activity.
- Consider using clickers for individual responses before and after group discussions about a question. This can make it easier to make sure peer instruction results in students correctly learning the information.
- Move through the classroom as students are engaging in peer instruction to ensure students stay on task and are able to ask you questions if a group struggles to come to a collective understanding of the information.

***Additional readings***


- Ramaswamy, S., Harris, I., & Tschirner, U. (2001). Student peer teaching: An innovative approach to instruction in science and engineering education. *Journal of science education and technology, 10*(2), 165-171.

- Drane, D., Micari, M., & Light, G. (2014). Students as teachers: Effectiveness of a peer-led STEM learning programme over 10 years. *Educational Research and Evaluation, 20*(3), 210-230.