Lunch@ITE – Spring 2018 Schedule

Tuesday, February 13: *Calculus and Structures: A New Approach to Teaching Calculus*, presented by Jay Kappraff

Students benefit when they can connect the skills they learn in their mathematics courses with the applications taught in their major courses. This session examines an alternative approach to teaching calculus based on Dr. Kappraff's work with architecture students. He has found a close connection between the shear force and bending moment of a beam and the subject of calculus that helps to clarify the analysis of structures while providing a powerful application of the ideas found in a Calculus 1 class. This approach can be adapted to a wide variety of major course topics. The presentation is divided into two parts: 1) The elements of calculus, and 2) the elements of structures with connections between the two.

Tuesday, February 20: *Exploring the Effects of a Writing Center Outreach Program on STEM Students' Beliefs about Writing*, presented by Catherine Siemann and John Wolf

Self-efficacy is the notion that one's belief in one's ability to succeed leads to successful performance (Bandura 1997, 2006). Our pilot quantitative study measures the extent to which supplemental instruction affects first-year composition students' writing self-efficacy. It centers on a collaboration between writing center and writing instructors to address the needs of the students here at NJIT, where many students believe that their math and science orientation means that they are inherently poor writers. A series of in-class workshops by writing center personnel was paired with mandatory writing center sessions. Participation in the program impacted first-year writing students' opinions about the writing as well as their self-reported writing anxiety in a statistically significant way.

Tuesday, February 27: *Strategies to Improve Efficiency in Grading Student Work*, presented by John Carpinelli

Grading homework and test papers is not the most enjoyable part of any professor's day. The task can be tedious and takes time that could be spent on other things. Nevertheless, it is important to give students accurate feedback to help them learn the material covered in the assignment or test. This session presents a few strategies designed to minimize grading time while still providing accurate assessment of student performance.

Tuesday, March 6: *Active Learning, Peer Learning, Studio Learning: Best?*, presented by Gordon Thomas

In a multi-year study of introductory physics, data show that active learning can reduce the failure rate by a factor of 5. The control is a group of professors presenting well thought-out lectures, carefully refined over many years. The top students do well with either type of teaching method. The peer learning method is a form of active learning that includes inter-student discussion. Our peer learning results are comparable to those of other active learning. Studio learning, in which students carry our basic experiments in class, provides comparable results in grades, but appears to add a deeper understanding. Exam construction and homework also improve the failure rate.

Tuesday, March 20: *Teaching a Computer Engineering Design Laboratory*, presented by Edwin Hou

Engineering is a practicing profession and “instructional laboratories” is an essential component of any undergraduate engineering program. For example, the EE and CoE curricula have laboratory work every semester after the second semester of the sophomore year. This talk will discuss some of the features and challenges in teaching a computer engineering design laboratory, many of which are common to other STEM disciplines.

Tuesday, March 27: *Undergraduate Student Preparedness for Upper-level Design Courses*, presented by Matt Bandelt

This talk explores undergraduate student performance in upper-level engineering design courses at NJIT. The impact of student prerequisite knowledge are discussed and related to the academic path of students. Recommendations for improving student preparedness for junior and senior level courses are presented.

Tuesday, April 3: *Use of a Partially Flipped Classroom to Facilitate Group Term Projects* presented by Matthew Adams

Many students complain about group term projects because of the difficulty of getting together as a group. This can be particularly true in higher level courses at NJIT where a significant amount of students live far off campus and work full time jobs. In CE 465 - Sustainable Civil Engineering, we have taken this complaint to heart and developed a partially flipped course. Students are given class time to work together on the project, and receive feedback from the instructor. In place of that class time, students are required to read, and participate in an online forum. The format of the class will be discussed. Challenges and advantages will be presented, along with the effectiveness of the style on group projects.

Tuesday, April 10: *Augmenting Teaching and Learning through "Evergreen" High Quality On-line Tutorials*, presented by John Cays and Andrzej Zarzycki

Beyond broad theory and deep knowledge of disciplinary framework, students consider digital tools skill acquisition in a rapidly changing professional landscape to be of paramount importance. Keeping abreast of every detail and new software development in even a single discipline is nearly impossible. NJIT has leveraged the third party digital tutorial company, Pluralsight to provide up-to-date instructional modules in both the College of Architecture and Design and the Ying Wu College of Computing. This session presents current user patterns and a case study that illustrates the efficacy of the approach and the value of this type of resource.

Tuesday, April 17: *TBD*, presented by Osama Eljabiri

Tuesday, April 24: *TBD*, presented by Dimitri Theodoratos