Abstract - Tablet PCs use their inherent ability to accept electronic ink (e-ink) input to enable users to interact with the device in a more natural way. This is especially important in learning environments where the user needs to focus on subject material rather than on the device used to record or store the subject information. Using Tablet PCs, instructors are able to increase their effectiveness by making more dynamic presentations and by including active exercises into their classroom environments. Tablet PCs also facilitate better and more natural note-taking by students and easier after-class review of course material and notes. Further, Tablet PCs facilitate better interaction with persons participating in classroom sessions from remote locations since they easily involve students exchanging visual descriptions of concepts with the instructor and the rest of the class.

Several software packages are available to support the pedagogical needs of the university classroom as well as typical group collaborative environments. Classroom Presenter, DyKnow, WriteOn and MS OneNote with the Interactive Classroom add-in are examples of some of the packages that provide excellent classroom capabilities. These packages allow for a highly interactive environment with both teacher-student and student-student bi-directional real-time interaction. See www.ee.vt.edu/~jgtront/tabletpc/ to download tablet PC software.

In this hands-on tutorial faculty will receive an introduction to the use of Classroom Presenter, OneNote, Interactive Classroom, VectorPad, and PDF Annotator. We will provide sufficient instruction for faculty to have a basic competency with the technology. Most importantly, we will show faculty various pedagogical practices that we have found helpful in using these technology tools in the classroom over the past seven years. Active learning exercises for various disciplines will be emphasized. Faculty will be tasked with developing short active learning exercises starting from the development of goals for the exercise, through the desired student interaction, and ending with the exercise assessment and improvement strategy. These active learning exercises will be targeted to students who are expected to be in the classroom as well as those who may be taking the course at extended campus locations.

Exercises will be determined by the individual faculty member’s disciplinary interests.

Index Terms – Tablet PC, active learning, student engagement, educational technology, slate computers, electronic ink, electronic note-taking

LEARNING OBJECTIVES

Workshop participants:

- Will be able to use Tablet PCs to significantly enhance the teacher-student and student-student interaction in the engineering learning environment.
- Will have the understanding of how to transform their classrooms into a much more active learning environment.
- Will understand Tablet PC technology well enough so that they can begin to convert their PowerPoint presentations into notes capable of being used in a real-time electronic ink environment and make more engaging presentations.
- Will be able to evaluate the effectiveness of the course transformations produced by the introduction of the Tablet PC and new pedagogical techniques as related to the overall course learning objectives.

PRESENTATION LENGTH

The workshop will be 90 minutes of presentation and interaction. Participants are encouraged to be prepared to engage with the presenters in a lively discussion on how the digital library resources and be used in their teaching environments.

INTENDED AUDIENCE

Faculty members from a broad spectrum of disciplines can benefit from attending this tutorial. The desire to improve teaching and learning through the appropriate use technology is the only prerequisite. Participants should also be willing to partake in the lively discussions that this tutorial generally invokes. The tutorial will be at a level that will allow faculty members who have a minimum of
technology training to participate. Faculty should know how to develop PowerPoint presentations.

**CONTACT INFORMATION**

**Presenters:** Joseph G. Tront, Virginia Tech, jgtront@vt.edu, 540-231-5067

**PRESENTER'S QUALIFICATIONS**

Dr. Joseph G. Tront is a professor in the Bradley Department of Electrical and Computer Engineering at Virginia Tech. He has had a leadership role in the NSF sponsored engineering education coalition called SUCCEED where he was the director of the center for computing and communications for the nine university coalition. In his work in education digital libraries, he is the editor for the Engineering Pathway digital library and is co-editor for the engineering collection of MERLOT. Dr. Tront also serves as editor for the Premier Award for Excellence in Engineering Education – an international award competition aimed at recognizing outstanding non-commercial courseware for use in engineering education. He has published articles in various venues describing the appropriate use of technology in higher education. He is also developing tools and techniques for using Tablet PCs in the classroom where his work is sponsored by Microsoft and HP. He is currently playing a lead role in Virginia Tech’s Tablet PC Requirement initiative in which all entering engineering students are required to own a Tablet PC. In 2010, Dr. Tront was named the W.S. “Pete” White Professor for Improving Engineering Education. He has presented this workshop at over 25 venues for audiences comprised of university educators.