What is a Live Virtual Classroom? Your NTC classroom instruction is accessible from student computers at any location. Providing your live NTC class virtually provides a classroom-like experience for remote students. Virtual instruction is especially critical for those who may not be able to travel. Remote students experience classes much the same as your students who are sitting in the classroom. From their computers, they can hear instructors, view presentation slides the electronic white board, participate in exercises and ask questions via chat screen or telephone.

Your in-the-classroom participants will not notice much of a difference when your class is taught to remote students. Occasional questions over the speakers and chat screen questions sent to your co-instructor’s computer in the back of the classroom are the only visible differences. Throughout your event an OED staff will ensure continuity of the streaming connection sent to your remote student computers.

How does it Work? OED uses an enhanced version of “USGS WebEx” to make NTC classrooms available to remote students. To enter your classroom virtually, students simply open a browser from their desk top computer using a provided link. Remote students can engage their instructors in real time from their computers using a chat screen window and/or telephone.

Is My Class a Good Choice for Live Virtual? Live, virtual works equally well for one-day and multi-day presentation style classes. OED recommends streamed classes have a minimum of two instructors. This allows one instructor to monitor and answer remote student questions via the chat screen while the other is “up front” teaching. Regardless, the number of remote students should not significantly exceed the maximum overall student count for your course.

Course Modifications: Some modifications of your course materials may be necessary for effective virtual delivery. PowerPoint slides should use a minimum 24pt, Sans-Serif font. As for all presentations, the amount of text on each slide should be limited. Using additional slides to explain a complex idea is recommended and slide colors/backgrounds should be consistent. Having each slide numbered along with any exercises is encouraged. Slides should be limited to 30 per hour with self-paced activities for each instructional module. This will provide maximum engagement and retention. Breaks should be announced with specific slides. In advance of your class, instructional designers on staff are available to review your course content and provide recommendations if you wish.

Remote Student Engagement: Remote students are as equally important as your in-classroom students and appreciate being engaged by their instructors. Because they are not visible, remote students can sometimes be easy to forget. To prevent this, we will put the names and locations of all your remote students on the classroom whiteboard for all to see. To keep your remote students on their “toes”, instructors are encouraged to ask them specific questions by name.

Exercises: Participation in class exercises is equally important for remote students. NTC staff will ensure your course materials are provided to registered remote students in advance. For some classes, remote
students may need access to class related software such as Modflow, S-Plus, or other software on their remote computers in advance of the class start.

**Handouts for Virtual Students:** To ensure your live virtual class is a success, NTC provides a “Tips and Techniques” handout developed especially for USGS subject matter expert/instructors. OED will also provide your remote students with a handout “Virtual Classroom-What Students Need to Know.”

**Technical Support:** OED Staff briefs instructors and remote students about what to expect in advance. They will also monitor the video stream for the duration of your class. Real-time technical assistance is also available for remote students and instructors.

**Associated Costs:** The normal advertised tuition in DOI LEARN applies for remote students. Beyond the NTC learning support services fee, there are no additional charges to present your course to remote students.

**Responsibilities of Remote Students:** Your remote students register and prepare for a live virtual class the same as their classmates in your classroom. They will be prompted to familiarize themselves with your course outline and any materials in advance. They are encouraged to ask questions during the class. OED Staff asks remote participants to login 30 minutes before the class starts on the first day so we can cover any last minute questions. We also let them know to be patient when asking questions via the chat screen, as your instructors may be simultaneously fielding questions from other remote students. For more involved classes, we recommend remote students “team up” with others from their office to take your class. Supervisors are made aware of the duration of the streamed class, start and end times and the need for their staff to stay at their computer for the duration of the class. OED staff will provide this information to remote student supervisors.

Your remote students will test their virtual streaming connection prior to the start of the class. NTC staff will schedule several tests prior to the start of the class. Remote students are also invited to attend a brief at the conclusion of the first day to provide feedback. This allows the instructors to make minor changes, if necessary.

**Remote Participants - What’s needed?**
- An internally networked computer with 2 GHZ processor speed
  - A minimum of 1GB network connectivity
- A test of the video stream in advance of the class (this will be scheduled by NTC staff)
- An informed and supportive supervisor

Virtual Classes Work! Questions? Contact Patty Gonwa, pmgonwa@usgs.gov, Tel: 303-445-4680 or Ralph Roland, raroland@usgs.gov, Tel: 303-445-4678