

Active Learning in Introductory Physics Courses: Research-Based Strategies that Improve Student Learning

Portland, OR July 29-31, 2024

Course Schedule

Monday, July 29 (8:30 AM—6:15 PM)

- 8:00 am Coffee, etc.
- 8:30 am Welcome and Introductions
- 9:00 am Overview of *Activity-Based Physics Suite*: Active vs. Traditional Learning
- 9:15 am *Force and Motion Conceptual Evaluation (FMCE)*
- 9:45 am Break
- 10:00 am Hands-on with *RTP Mechanics* Labs 1 and 2
- 11:45 am Introduction to *The New Mechanics Sequence*
- 12:00 pm Lunch
- 1:00 pm Continued hands-on with *RTP Mechanics* Labs 3, 4 and 5
- 3:00 pm Introduction to Interactive Lecture Demonstrations (ILDs)
- 3:45 pm Clicker *ILDs*
- 4:00 pm Break
- 4:15 pm Formation of groups to prepare ILDs
- 4:30 pm Preparation for presentation of ILDs
- 6:15 pm Reception on roof
- 7:15 pm Adjourn

Tuesday, July 30 (8:30 AM - 6:15 PM)

- 8:00 am Coffee, etc.
- 8:30 am Presentation of ILDs by Group 1
- 9:10 am Presentation of ILDs by Group 2
- 9:50 am Break
- 10:05 am Presentation of ILDs by Group 3
- 10:45 am Presentation of ILDs by Group 4
- 11:30 am Hands-on work with Home-Adapted ILDs
- 12:00 pm Lunch
- 1:00 pm Introduction to *Workshop Physics (WP)*, *Analytic Mathematical Modeling* and *Physics w/ Video Analysis (PVA)*
- 2:15 pm Introduction to *Interactive Video Vignettes (IVV)* and IVV homework assignment
- 2:35 pm Introduction to *RTP Light and Optics*
- 2:45 pm Break
- 3:00 pm Hands-on with *RTP Light and Optics* Labs 3 and 5
- 4:15 pm Active learning approach used in *RTP* and *WP* for Heat and Thermodynamics
- 4:30 pm Introduction to *RTP Electricity and Magnetism*
- 4:40 pm Hands on with *RTP Electricity and Magnetism* Labs 1-3
- 5:45 pm Adjourn

Wednesday, July 31 (8:15 AM - 12:00 NOON)

- 8:00 am Coffee, etc.
- 8:15 am Discussion of IVV homework assignment
- 8:45 am Research on the effectiveness of active learning, and discussion on implementation
- 9:30 am Hands on with *RTP Electricity and Magnetism* Labs 4-6
- 10:30 am Break
- 10:45 am Hands on with *RTP Electricity and Magnetism* Lab 10
- 11:15 am Recitation and tutorial time: *Collaborative Problem-Solving Tutorials* and *Activity-Based Tutorials*
- 11:30 am Evaluations and closing discussion on implementation issues, etc.
- 12:00 pm Adjourn