

ACTIVITY BASED PHYSICS FACULTY INSTITUTE SCHEDULE
June 17-22, 2007

Each day has 4 blocks of 90 minutes each. There will be a 5th block on some evenings.

Block 1 is 8:20 to 9:50 am
Block 2 is 10:10 to 11:40pm
Block 3 is 1:00 to 2:30pm
Block 4 is 2:50 to 4:20pm
Block 5 is 6:30 to 8:00pm (unless otherwise specified)

Breaks are held at 9:50 AM and 2:30 PM. Lunch is 11:40 AM - 1:00 PM.

SUNDAY, JUNE 17

6:00-8:00 PM Picnic Dinner and Introductions

MONDAY, JUNE 18

BLOCK 1: INTRO TO INSTITUTE CURRICULUM/CONCEPTUAL EVALUATION

- Overview of Institute goals and curriculum (15 min)
- FMCE (30 min)
- Presentation of research results on the FMCE for students with traditional instruction (15 minutes)
- Overview of *Activity-Based Physics Suite* (15 minutes)
- Introduction to *RealTime Physics Module 1, Mechanics* (15 minutes)

BLOCK 2: MECHANICS I: REALTIME PHYSICS, MODULE 1

- Hands-on work with Labs 1, 2 (Kinematics) and 3 (Dynamics)

BLOCK 3: MECHANICS II: REALTIME PHYSICS, MODULE 1

- Hands-on work with Labs 3, 4, 5 and 9 (Newton's Second and Third Laws)

**BLOCK 4: MECHANICS III: INTRODUCTION TO LOGGER PRO VIDEO ANALYSIS SOFTWARE;
MODELING FOR CONSTANT ACCELERATION**

- Introduction to Video Analysis and Modeling (15 minutes)
- Modeling w/ WP Activities 1.6-1.7 (w/ HW), 3.7, 4.6 as demonstration, 4.7 as hands-on (75 min)
(Note: Demo LP Video w/ PASCO006.mov to get data for parabolic modeling)

OPTIONAL: "DR. STAN'S DEMO SHOW," 5:00 PM, Room 110 WIL, Stan Micklavzina, Department of Physics, University of Oregon

EVENING: FILL OUT WORKSHOP EVALUATION

TUESDAY, JUNE 19

BLOCK 1: MECHANICS IV: MODELING PROJECT, RESEARCH RESULTS, ACTION RESEARCH

- Mini project on modeling: MBL or LP Video (See Mini Modeling Project folder on desktop. (40 minutes)
- Sharing Outcomes of Mini project (15 minutes)
- Research results on the impact of RTP Mechanics and modeling exercises from Workshop Physics and discussion (20 minutes)
- Discussion of Action Research and expectations (15 minutes)

Block 2: MECHANICS V: INTERACTIVE LECTURE DEMONSTRATIONS

- Examples of ILDs in mechanics
- The ILD procedure
- Web-Based ILDs in mechanics
- Research results on the effectiveness of ILDs and discussion

BLOCK 3: HEAT AND THERMODYNAMICS I: REALTIME PHYSICS

- Introduction to tools (15 minutes)

- Hands-on work with Labs 1 and 2 (Introduction to Heat and Temperature/Heat Energy Transfer) (75 minutes)

BLOCK 4: HEAT AND THERMODYNAMICS II: REALTIME OR WORKSHOP PHYSICS

- Hands-on work with RTP Labs 3 and 6 (Changes of Phase/Heat Engines) (75 minutes)
OPTIONAL ALTERNATIVE: WP Module 3, Units 17 &18 (Sections 17.1-17.3,18.5)
- Heat Engine ILDs (15 minutes)

EVENING: FILL OUT WORKSHOP EVALUATION

WEDNESDAY, JUNE 20

BLOCK 1: ELECTRIC CIRCUITS I: REALTIME PHYSICS

- ECCE (30 minutes)
- Hands-on work with Labs 1 and 2 (Current Model and Current in Simple DC Circuits) (60 minutes)

BLOCK 2 ELECTRIC CIRCUITS II: REALTIME OR WORKSHOP PHYSICS

- Hands-on work with RTP Labs 3 and 5 (Voltage in Simple Circuits/ RC Circuits) (75 minutes)
OPTIONAL ALTERNATIVE: WP Module 4, Unit 22 (Sec 22.13-22.16) U 24 (Sec 24.3, 22.5, 24.7)
- RC Circuit ILDs (15 minutes)

BLOCK 3: LIGHT AND OPTICS I: REALTIME PHYSICS

- Introduction (15 minutes)
- Hands-on work with Labs 1 and 2 (Reflection and Refraction) (75 minutes)

BLOCK 4: LIGHT AND OPTICS II: REALTIME PHYSICS AND ILDS

- Image Formation ILDs (25 minutes)
- Hands-on work with Labs 5 (Polarization) (65 minutes)
OPTIONAL ALTERNATIVE: LIGHT AND OPTICS: EXPLORATIONS IN PHYSICS

Block 5: LIVE PHOTO/CURRICULUM MINI-PROJECTS

- Introduction to Live Photo (10 minutes)
- Work with LivePhoto assignments (50 minutes)
- Planning for curriculum mini-projects (30 minutes)

EVENING: FILL OUT WORKSHOP EVALUATION, WORK ON CURRICULUM PROJECT (OPEN LAB)

THURSDAY, JUNE 21

BLOCK 1: OPEN LAB—PROJECT WORK

BLOCK 2: OPEN LAB—PROJECT WORK

BLOCK 3: OPEN LAB—PROJECT WORK

BLOCK 4: ALL MEET IN LAB: Discussion of Action Research. Workshop Evaluations.

BLOCK 5 OPEN LAB. INFORMAL WORK ON CURRICULUM PROJECTS

EVENING: FILL OUT WORKSHOP EVALUATION

FRIDAY, JUNE 22

BLOCK 1 (8:00-9:30): PROJECT PRESENTATIONS AND FEEDBACK (9 MINUTES/PERSON)

BLOCK 2: (9:50-11:20) PROJECT PRESENTATIONS AND FEEDBACK (9 MINUTES/PERSON)

WRAPUP (11:20-11:45) Discussion of implementation issues, follow-up, AAPT symposium, etc.

11:45-1:00 PM CLOSING LUNCHEON/WRAPUP