



UNESCO Active Learning in Optics and Photonics (ALOP) Logistical Requirements for Workshops

The organization of an ALOP workshop is coordinated between four individuals and/or groups:

1. ALOP Director, Joe Niemela, ICTP, Trieste, Italy. niemela@ictp.it.
2. ALOP international facilitator team.
3. ALOP regional coordinator(s). (The Regional Coordinators are listed below.)
4. Local ALOP workshop host(s) and organizer(s) (formed into a Local Organizing Committee).

The following will be arranged by the ALOP Director and the ALOP UNESCO Administrator in collaboration with the ALOP Regional Coordinator(s):

1. Contact information for the workshop facilitators and other members of the project working group.
2. Return airfares to workshop venue for workshop facilitators.
3. 10 sets of materials and equipment needed for all hands-on activities, except for easily found, locally-sourced materials. (A full list of local equipment requirements is contained in the Appendix.) After the workshop, the 10 sets of workshop materials and equipment are distributed to selected workshop participants from the regions represented in the workshop.
4. Copies of ALOP Training Manual (or payment for a suitable local high-quality reproduction) sufficient in number for distribution (free of charge) one copy to each workshop participant.
5. Information on other international sources of funds to cover regional travel of participants and local expenses, such as accommodations, meals and local transportation for participants and facilitators:
 - ♦ ICTP Office of External Activities (OEA): see <http://oea.ictp.it/oea/programmes/sm/> or contact oea@ictp.it,
 - ♦ Optical Society of America (OSA) (kapter@osa.org),
 - ♦ European Physical Society (EPS) Interdivisional Group for Physics and Development (francois.piuzzi@cea.fr),
 - ♦ The Academy of Sciences for the Developing World (TWAS) see 'twas.org'.

6. A financial contribution of at least \$3000 toward regional travel of participants, local expenses and workshop materials (from UNESCO).
7. Workshop programme, in consultation with workshop organizers and facilitators.

The following are required from the Local Host(s) and Organizer(s):

1. Form a Local Organizing Committee (LOC) that decides the rationale for hosting and organizing a local ALOP workshop, and how the workshop would benefit the university, country and region.
2. After careful consideration of requirements, the LOC writes a formal request to UNESCO to organize and host the ALOP workshop. Prior to this, initial discussions can be carried out by e-mail with the Director and UNESCO Director.
3. The LOC proposes the workshop dates.
4. The LOC explores involvement and support of the host university, local physical/optical society, the government (ministry of education and/or science), regional bureau of the International Commission on Optics (ICO), local UNESCO office, and the National Commission for UNESCO.
5. The LOC invites participants who teach optics (or other areas of physics) from the host university, other universities and high schools in the region and country. If possible some regional participants from neighbouring countries should be invited. There should be a minimum of 30 participants (40 maximum).
6. An effort should be made to have a balance of both male and female participants, with a significant presence of female participants.
7. The LOC arranges a suitable venue and laboratory facility for the workshop and appropriate accommodations for facilitators and foreign participants, as near as possible to the workshop venue. (See more details of the facilities required, below.)
8. The LOC raises funds from international, regional and local sources to cover regional travel of participants and local expenses, such as accommodations, meals, local transport, and some workshop materials. This includes local accommodations, meals and local transport for the facilitator team.
9. The LOC notifies UNESCO immediately if there will be any expected problems with English fluency for participants in order to assess the need for alternative-language manuals and supporting documents (French, Spanish etc), multi-lingual facilitators and/or interpreters. In some cases where alternative-language manuals do not exist, local organisers may be asked to translate the ALOP manual and supporting documents into the local language prior to the workshop.

Facilities needed for ALOP workshops:

1. A workshop room that can be fully darkened (like on a moonless night) and has enough space, tables and chairs for up to 40+ people (30 participants, 10 facilitators, assistant facilitators and other UNESCO team members). The workshop room should have an area

greater than 120 square metres. This room should be comfortable (not too hot or too cold) as the 40+ people will spend considerable time in this room each day.

2. The accommodations for the participants and facilitators should preferably be relatively close to the workshop location.
3. The participants will sit at the tables in 10 working groups of 3-4 participants each. There should be a table and chairs for each group, a table and chairs for the facilitators, and one or two more tables (for equipment and an overhead projector).
4. A data projector and screen. (An expanse of smooth, white wall viewable by the sitting participants is acceptable.)
5. A preparation room for the facilitators (preferably close to the workshop room).
6. The workshop room and preparation room must be secure (lockable).
7. WI-FI or wired internet in the workshop and preparation rooms, and in the facilitators' living accommodations (if at all possible).
8. Technical support in the form of technician(s) or lab assistant(s) who can help with workshop setup, and procurement of materials and supplies.
9. Safe transport between the workshop space and the accommodations for facilitators and participants.
10. Lunch and break facilities should be within a short walking distance from the workshop room.

For further information, contact:

Director at UNESCO/ICTP

Joe Niemela (niemela@ictp.it)

Regional Coordinators

ALOP Africa: Souad Lahmar (soulahmar@yahoo.fr)

ALOP Asia: Alex Mazzolini (amazzolini@swin.edu.au)

ALOP Latin America: Angela Guzman (amguzmanh@gmail.com)

and David Sokoloff (sokoloff@uoregon.edu)

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ALOP Locally-Sourced Equipment Items Provided by Host Institution

(Note: Most of the hands-on station items like batteries, pencils, etc. will be distributed to participants at the end of the workshop.)

Module 1: Geometrical Optics

For the hands-on stations:

1 sharp pencil per hands-on station (10 total)

Small amount of chalk dust in a plastic bag per hands-on station (to make laser beam visible) (10 total)

1 fresh, rectangular 9 V battery per hands-on station, like this (10 total)



2 sheets fine (1 mm) grid graph paper (20 total)

For demonstrations (needed in the quantities indicated):

1 bottle (500 ml) of vegetable cooking oil—must be transparent (not opaque) (e.g., corn or peanut oil)

30 AAA, 1.5 V alkaline batteries for the lasers that will be brought by facilitators (2 for each)



20 AA, 1.5 V alkaline batteries for the flashlights that will be brought by facilitators (2 for each)

1 regular (e.g., 60 W) clear light bulb, socket and holder

2 (4 would be better) 500-600 ml clear glass or plastic beakers

1 large acrylic or glass sheet about 60 cm x 60 cm with supports to hold it vertically (supports need to be on edges so that there is an unobstructed view of the center)

1 black or other dark, opaque cloth large enough to cover the acrylic or glass sheet described above

1 candle about 2.5 cm in diameter and 10 cm tall

1 book matches or 1 lighter

1 two liter, transparent, plastic water or pop bottle with screw-on cap.

1 trough (around 50 cm x 30 cm x 5 cm deep) to catch water on the floor.

1 lab stand, ring and two clamps like this



Module 2: Lenses and Optics of the Eye

For the hands-on stations:

1 ball of clay (Plasticine) approx. 3 cm diameter per hands-on station to mount lenses, etc. (10 total)



1 meter stick or meter tape measure per hands-on station (10 total)



or

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or

For demonstrations (needed in the quantities indicated):

Nothing required

Module 3: Interference and Diffraction

For the hands-on stations:

Nothing required

For demonstrations (needed in the quantities indicated):

1 overhead projector (the old type and not the camera type)

Module 4: Atmospheric Optics

For the hands-on stations:

1 acrylic rectangular water container per hands-on station (10 total) (If the local host has the capability to make these, local fabrication will be requested. Otherwise the acrylic for constructing these will be brought by facilitators, and chloroform will be needed locally to assemble them. More information is available on request.)

For demonstrations (needed in the quantities indicated):

1 overhead projector (the old type and not the camera type)
1 glass beaker, 1000 ml
about 50 ml liquid soap
about 50 ml whole milk

Module 5: Optical Communications and Module 6: Wavelength Division Multiplexing

For the hands-on stations:

1 fresh 9V transistor alkaline battery per hands-on station (with 2 extras—12 total)



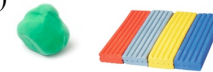
1 thin white cardboard per hands-on station (approx. 20cm x 10cm—used to show colored light pattern from LEDs) (with 1 extra—11 total)



For demonstrations (needed in the quantities indicated):

4 fresh 1.5 AAA alkaline batteries (must be fresh so they last a full 5 hours of use in Modules 5 and 6)

Approximately 200 gm of Plasticine or flexible clay (used to hold components in place)



Additional equipment needed for my preparation and testing of equipment:

1 set of Pliers



1 scissors, blade and adhesive tape



1 small set of screwdrivers (blade and Philips head)



1 soldering iron and solder



1 multimeter

