

# Chapter 24

## Training

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# 1 Overview

This chapter describes the program used to ensure all personnel receive environment, safety, and health (ES&H) training appropriate for the hazards to which they may be exposed. The ES&H training program has been developed to address the ES&H training requirements established by the Stanford Linear Accelerator Center (SLAC) and the Department of Energy (DOE).

## 1.1 Hazards/Impacts

Many areas at SLAC contain hazardous equipment, chemicals, and materials used in the advanced research pursued here. Those personnel who have not been trained to recognize and mitigate these hazards pose a danger to themselves, coworkers, and to the environment.

# 2 Scope

This chapter covers the management of ES&H training, including the general responsibilities of managers, supervisors, and line personnel. The training requirements associated with specific hazards and the ES&H programs for controlling them can be found in the relevant chapters of this manual and the ES&H Training Course Catalog.<sup>1</sup>

This chapter applies to personnel working at SLAC who may be exposed to any occupational or environmental hazard for which specific training is required by the work smart standards (WSS) or SLAC policy.

The term *personnel* includes SLAC employees, *contracted parties*, and *users*. The latter two groups are known collectively as *non-employees*, and the formal program, a sub-set of the overall ES&H training program, is known as the *non-employee safety training program* (NESTP) (see Section 4, “Definitions”). To the extent the requirements of this program differ from those of the main program, they are called out in this chapter.

The requirements in this chapter do not apply to on-the-job training (OJT) or non-ES&H-related training offered by other groups at SLAC.

*Note* Supervisors and managers are responsible for ensuring that OJT is completed and documented as needed. The ES&H training program provides support for OJT through the development and identification of ES&H training standards and guidelines.

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1 “Training – Course Catalog”, [https://www-internal.slac.stanford.edu/esh-db/training/slaonly/bin/catalog\\_index.asp](https://www-internal.slac.stanford.edu/esh-db/training/slaonly/bin/catalog_index.asp)

## 2.1 Exemptions

The following individuals are exempt from ES&H training program requirements:

- Casual visitors, emergency responders, drivers of delivery vehicles, service technicians, and others whose presence will not involve exposure to a SLAC-specific hazard or travel within an industrial/controlled/accelerator area
- Employees working off site for extended periods of time, such as scientists working at distant research institutions and employees on extended leave

*Note* Employees working off site will satisfy the ES&H training requirements of their host institution.

In addition the SLAC training program allows personnel to challenge and transfer courses (see Section 5.2, “Procedures and Specific Requirements”).

## 3 Standards

The ES&H training program has been designed to meet the following standard:

- Title 10, *Code of Federal Regulations*, “Energy”<sup>2</sup>
  - Part 851, “Worker Safety and Health Program”, Section 25, “Training and Information” (10 CFR 851.25)<sup>3</sup>
- Title 29, *Code of Federal Regulations*, “Labor”
  - Part 1910, “Occupational Safety and Health Standards” (29 CFR 1910)<sup>4</sup>

*Note* Standards specific to individual ES&H programs are described in the relevant chapters of this manual; the process for approving training requirements is described in Section 5.2.1, “Establishing Training Requirements”.

## 4 Definitions

*Accelerator Area.* The area containing the main accelerator and SSRL housings and associated equipment (see *Site Access and Identification Badges Policy and Procedures*).<sup>5</sup> The Accelerator Area is surrounded by a control fence. This area is considered an industrial area (see *industrial area*).

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2 “Code of Federal Regulations: Main Page”, <http://www.gpoaccess.gov/cfr/>

3 Additional information on 10 CFR 851 and its implementation is available from the following site: “Worker Safety and Health Program Final Rule - 10 CFR 851”, <http://www.hss.energy.gov/healthsafety/WSHP/rule851/851final.html>

4 [http://www.osha.gov/pls/oshaweb/owastand.display\\_standard\\_group?p\\_toc\\_level=1&p\\_part\\_number=1910](http://www.osha.gov/pls/oshaweb/owastand.display_standard_group?p_toc_level=1&p_part_number=1910)

*Area hazard analysis (AHA).* The process used to evaluate a work area to determine the hazards that may be present and appropriate controls for these hazards and provide a mechanism to communicate these hazards to someone entering the area

*Controlled area.* Area where access is managed to protect individuals from exposure to radiation and/or radioactive materials. Individuals who enter a controlled area (but not a *radiologically controlled area*) should not receive an occupational dose each year of more than 0.1 rem total effective dose equivalent (TEDE).

*Course, core.* Course required by external regulations or SLAC policy

*Course, practical.* A hands-on demonstration of skills, scheduled with an ES&H authorized instructor and recorded in the ES&H Training Database. Practical training is required to complete certification of some topic areas.

*Note* *Practical training is not to be confused with on-the-job training (OJT), which is not provided by ES&H Training and is not recorded and tracked in the ES&H Training Database.*

*Course, resource.* Course that is not required by regulation or policy but is of significant value. Supervisors may require certain personnel take resource courses

*Industrial area.* An area where some level of hazard (moving machinery, noise, electricity and chemicals) may exist (see *Site Access and Identification Badges Policy and Procedures*<sup>6</sup>)

*Job hazard analysis and mitigation (JHAM).* A formal process by which personnel plan work, identify task specific hazards, assess associated risks, establish control measures (mitigate risks), and monitor effectiveness

*Non-employee.* Personnel present at SLAC who are not SLAC employees are considered *non-employees*. The term specifically includes contracted parties, users, and technical collaborators, DOE staff, department associates, lecturers, and visitors.

- *Casual visitor.* Individuals coming to the SLAC campus for a period of no more than 30 days per visit, whose visit does not involve unescorted entry to industrial/accelerator or other areas where unique SLAC hazards warrant limited access, and whose visit is for the following types of purposes: attending public lectures, public tours, or other activities open to the public; attending workshops, conferences, and collaboration meetings; use of the Linear Cafe (SLAC cafeteria); use of the SLAC Guesthouse; and meetings with SLAC personnel.
- *Contracted party.* A non-employee working at SLAC under contract
- *User and similar non-employee.* An individual user, collaborator, student, visiting scholar, scientist, or researcher. Personnel under contract to provide special, current, professional knowledge in a particular field, such as engineers, technicians, other credentialed professionals, and visitors who will be on site for a period greater than 30 days .

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5 *Site Access and Identification Badges Policies and Procedures* (SLAC-I-720-0A0Z-002), [https://www-internal.slac.stanford.edu/esh/documents\\_internal/SiteAccess.pdf](https://www-internal.slac.stanford.edu/esh/documents_internal/SiteAccess.pdf)

6 *Site Access and Identification Badges Policies and Procedures* (SLAC-I-720-0A0Z-002), [https://www-internal.slac.stanford.edu/esh/documents\\_internal/SiteAccess.pdf](https://www-internal.slac.stanford.edu/esh/documents_internal/SiteAccess.pdf)

*Non-employee safety training program (NESTP).* A program to address the safety training needs of non-employees requiring SLAC-specific safety training for anyone carrying out on-site activities that might expose them to the unique hazards of this facility, based on the assumption that the basic safety rules applicable to each trade or service industry are already known and understood by these non-employees.

*Pre-work hazard analysis (PWH).* A process by which contracted parties plan work, identify task-specific hazards, assess associated risks, and establish control measures (mitigate risks)

*Radiologically controlled area (RCA).* Areas where personnel may receive an annual occupational radiation exposure of greater than 100 mrem

*Restricted period.* The initial period during which workers are assigned training through the STA during which they may complete their training, while operating under direct supervision

*SLAC contact.* An employee of SLAC assigned responsibility for a non-employee such as but not limited to users, collaborators, students, visiting scholars, scientists, and researchers, as well as consultants, engineers and technicians in support of research projects. Contracted parties are usually assigned a contract administrator and a university technical representative (UTR).

*SLAC ES&H Training Database.* The database application accessed through the ES&H web site by managers and supervisors and the ES&H Training Team to track ES&H training and generate reports used for performance measurement

The training database supports the following management systems:

- *SLAC Training Assessment (STA).* A tracking tool accessed through the ES&H web site by managers and supervisors to designate and document training requirements for individual employees.
- *SLAC Training Registration System.* The SLAC tool used to register personnel to take instructor-led ES&H training identified in the STA
- *ES&H Training Reports.* Training database reports on training compliance and course registrations

## 5 Requirements

### 5.1 General

SLAC will establish and implement ES&H training requirements in accordance with applicable regulations and SLAC policy (see Section 3, “Standards”). All personnel at SLAC will meet the requirements associated with their position, tasks, and locations, and the ES&H training program will develop, provide, and track this training as required using formal processes.

#### 5.1.1 Site Access Training Requirements

Training requirements for site access are established in the WSS and by SLAC policy. Access to SLAC industrial areas, any RCA, controlled areas, and the Accelerator Area (see Section 4, “Definitions”) is limited to personnel who have completed ES&H training required for access to these areas, or personnel

escorted by someone who has completed the required training. (See the *Site Access and Identification Badge Policy and Procedures*<sup>7</sup> and Chapter 9, “Radiological Safety”.<sup>8</sup>)

### 5.1.2 Establishing Training Requirements

Requirements for ES&H training will be established using a formal process and recorded in each hazard-specific chapter of this manual. Training requirements will be reviewed annually along with each manual chapter and its associated standards. (See “About This Manual”<sup>9</sup> and Chapter 1, “General Policy and Responsibilities”.<sup>10</sup>)

#### 5.1.2.1 Training for ES&H Program Managers

SLAC recognizes and supports professional certification activities such as participation in professional meetings, conferences, professional development workshops. This is supported through, among other things, the staff training assistance program (STAP) and staff tuition reimbursement program (STRP), which are educational reimbursement benefits afforded to employees, and SLAC-supported expenses approved by supervisors for participation in travel to and from professional events at which continuing education credits necessary for support of professional licenses and certifications can be acquired.

### 5.1.3 Assessing Training Requirements for Individuals

The training required of any individual at SLAC will be assessed as described in this chapter, using a process that first identifies general and specific hazards, then relates these to ES&H courses, and finally tracks the individual’s completion of these courses.

#### 5.1.3.1 Other Training

Personnel at SLAC often are required to take training other than that offered by ES&H. See Training: Training at SLAC for an illustration of different types of training by type of individual.<sup>11</sup>

### 5.1.4 Satisfying Training Requirements for Individuals

SLAC employees will complete all training requirements as soon as reasonably possible after beginning work at SLAC.

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7 *Site Access and Identification Badges Policies and Procedures* (SLAC-I-720-0A0Z-002), [https://www-internal.slac.stanford.edu/esh/documents\\_internal/SiteAccess.pdf](https://www-internal.slac.stanford.edu/esh/documents_internal/SiteAccess.pdf)

8 *SLAC Environment, Safety, and Health Manual* (SLAC-I-720-0A29Z-001), Chapter 9, “Radiological Safety”, [http://www-group.slac.stanford.edu/esh/general/radiological\\_safety/policies.htm](http://www-group.slac.stanford.edu/esh/general/radiological_safety/policies.htm)

9 “About This Manual”, [http://www-group.slac.stanford.edu/esh/eshmanual/about\\_eshmanual.htm](http://www-group.slac.stanford.edu/esh/eshmanual/about_eshmanual.htm)

10 *SLAC Environment, Safety, and Health Manual* (SLAC-I-720-0A29Z-001), Chapter 1, “General Policy and Responsibilities”, [http://www-group.slac.stanford.edu/esh/general/general\\_policy/policies.htm](http://www-group.slac.stanford.edu/esh/general/general_policy/policies.htm)

11 Training: Training at SLAC (SLAC-I-720-0A04S-002), <http://www-group.slac.stanford.edu/esh/eshmanual/references/trainingChartTraining.pdf>

#### 5.1.4.1 Restricted Periods

SLAC has implemented a policy of allowing 90 days for personnel to complete new training assignments. This policy is called *training restricted periods*. During this restricted period, although the worker may have 90 days to complete the training, the work during this period may be restricted. The level of work restriction varies depending on regulations or SLAC policy governing the hazards mitigated by the training. For example, a worker may not under any circumstances work with radioactive material without the proper training but will be allowed to work at a computer until receiving the appropriate ergonomics training.

There are three levels of restricted period:

1. *Access restricted*. Access to certain areas is restricted unless training has been completed. Training is required for unescorted access to these controlled areas; no work can be performed or access granted until required training is complete.
2. *Work restricted*. Due to the level of the hazard, the worker cannot undertake the related activity until he/she has completed the training. Examples include hoisting and rigging operations (requires Basic Crane and Rigging course), excavation (requires Excavation Safety course), and entry into permit-required confined spaces (requires Permit Required Confined Space course).
3. *90 Days*. When a new training is assigned in the STA, workers have a period of 90 days to complete their training before it is considered overdue. This 90 day period applies to new training assignments only. It does not apply to refresher training. Workers will receive a notice at 60, 30 and 15 days before required refresher training comes due. Refresher training will be considered overdue once the due date passes.

Refer to *Site Access and Identification Badges Policy and Procedures*<sup>12</sup> and the Restricted Period Training Matrix for details.<sup>13</sup>

Contracted parties will satisfy all training requirements before beginning work at SLAC.

#### 5.1.5 Providing Training

Courses will be developed and offered following the provisions of this chapter. Unless otherwise specified, training will be offered free of charge. Courses may be offered in person or on line, on or off site, as resources and circumstances allow. Courses will be offered on a schedule, which will be adjusted depending on demand (see Section 5.2.3.1, “Course Registration and Completion”).

All ES&H courses are available to all personnel, subject to approval by their managers and supervisors, or SLAC contacts in the case of contracted parties and users.

*Note* Contracted parties are required to provide their employees with non-SLAC-specific trade-related safety training.

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12 *Site Access and Identification Badges Policies and Procedures* (SLAC-I-720-0A0Z-002), [https://www-internal.slac.stanford.edu/esh/documents\\_internal/SiteAccess.pdf](https://www-internal.slac.stanford.edu/esh/documents_internal/SiteAccess.pdf)

13 “Training - Restricted Periods”, [http://www-group.slac.stanford.edu/esh/training/restricted\\_periods.htm](http://www-group.slac.stanford.edu/esh/training/restricted_periods.htm)

### 5.1.6 Recordkeeping

Training records will be maintained for all personnel in accordance with SLAC policy. The recordkeeping requirements associated with specific programs are included in the relevant chapters of this manual. The ES&H Training Database will serve as the primary record-keeping system for recording and managing ES&H training information. Records will be available on line to personnel, their managers and supervisors and upon request to external reviewers.

*Note* Errors in training records should be reported to the ES&H Training Team through the ES&H Training Customer Service System.<sup>14</sup> All error reports are researched and tracked to completion.

#### 5.1.6.1 Reporting

Reports from the ES&H Training Database will be available on line to employees, supervisors and managers. The following training reports are available:<sup>15</sup>

- ES&H Training Registration. This report shows personnel who are currently registered for ES&H courses
- ES&H Training Due Dates. This report shows due dates for the completion of required courses
- SLAC Training Assessments. This report shows individual training requirement information
- ES&H Training History. This report shows ES&H courses completed
- STA Completion Status. This report shows the completion status required training for personnel

In addition, the ES&H Training Online Supervisors Report is available on the ES&H Training web site summarizing the required ES&H training status of each employee.

### 5.1.7 Program Validation

#### 5.1.7.1 ES&H Training Program

The ES&H training program will be validated by the ES&H training program manager through self-assessment, peer review, and external audits. The ES&H Training Customer Service System<sup>16</sup> and ES&H Training Survey<sup>17</sup> will be used to track problems, issues, errors, and suggestions for improvement to the ES&H training program.

#### 5.1.7.2 ES&H Courses

Course validation will be accomplished through both initial and on-going review of quality, content, and relevance by committee and peer review. New ES&H courses will undergo review by the ES&H Training Subcommittee of the Operating Safety Committee. Major modifications, consolidation, and deletion of existing courses will follow this review process as well. Citizen committees will periodically review

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14 ES&H Training Customer Service System, <http://remedy.slac.stanford.edu/esh/training.html>

15 "Training – Reports", <http://www-group.slac.stanford.edu/esh/training/reports.htm>

16 ES&H Training Customer Service System, <http://remedy.slac.stanford.edu/esh/training.html>

17 ES&H Training Survey, <http://www-group.slac.stanford.edu/esh/training/survey.html>

existing courses for which they have oversight. Course participants will review courses (using the Course Evaluation Form<sup>18</sup>).

#### 5.1.7.3 Instructors

Instructor validation will be accomplished by evaluating instructors against established education and experience-based qualifications and through peer review. (See Training: Instructor Certification Procedure.<sup>19</sup>)

### 5.1.8 Roles and Responsibilities

#### 5.1.8.1 Program Directors

Program directors will

- Ensure personnel under their authority satisfy all ES&H training requirements
- Approve, jointly with ES&H program managers, waivers of training requirements for personnel

#### 5.1.8.2 ES&H Division Associate Director

The ES&H division associate director will

- Review and approve the ES&H training program, courses, and course changes
- Ensure ES&H training program performance is evaluated and reviewed and provide for continuous improvement

#### 5.1.8.3 ES&H Training Program Manager

The ES&H training program manager, as head of the ES&H Training Team, will

- Administer, manage, and support the ES&H training program
- Ensure required training is made available through the ES&H training program
- Approve instructors and training vendors
- Document and report training program information for managers and supervisors, employees, and authorized external reviewers
- Validate training reports and documentation to ensure accuracy
- Provide training system resources necessary to satisfy training requirements

#### 5.1.8.4 ES&H Training Subcommittee of the Operating Safety Committee

The ES&H Training Subcommittee will

- Review and approve proposals for new ES&H courses

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18 Course Evaluation Form, <http://www-group.slac.stanford.edu/esh/forms/>

19 Training: Instructor Certification Procedure (SLAC-I-720-0A04C-003), <http://www-group.slac.stanford.edu/esh/eshmanual/references/trainingProcedInstructor.pdf>

- Provide feedback on projects that impact ES&H training
- Provide policy development and/or change recommendations to the ES&H division associate director
- Complete special ES&H training-related projects as assigned by the ES&H division associate director

#### 5.1.8.5 ES&H Program Managers

ES&H program managers will

- Recommend ES&H training requirements
- Develop and deliver ES&H courses in their assigned areas of expertise
- Make course improvements based on course evaluations and the course validation process
- Evaluate and approve substitution of outside vendor ES&H training when appropriate with SLAC ES&H training
- Nominate instructor candidates and validate their qualifications

#### 5.1.8.6 Instructors

Instructors will

- Meet standards for instructional, technical, and interpersonal skills
- Perform duties as required by this chapter

#### 5.1.8.7 Citizen Committees

Citizen committees will

- Review training courses and material to ensure quality and validate content

#### 5.1.8.8 Managers and Supervisors

Managers and supervisors will

- Identify training needs for each individual under their supervision and determine individual training requirements
- Record individual training requirements in the training database, through the STA
- Review and update requirements for each individual at least annually in anticipation of the annual performance review cycle and when individual duties or hazard exposure changes
- Attest to instructor qualifications

#### 5.1.8.9 SLAC Contacts

SLAC contacts will

- Identify training needs for each individual under their supervision and determine individual training requirements
- Record individual training requirements

- Review and update requirements for each individual when individual duties or hazard exposure changes

#### 5.1.8.10 SLAC Employees

SLAC employees will

- Complete basic Employee Orientation to ES&H (EOESH) and General Electrical Safety training prior to commencing work
- Successfully complete all ES&H training requirements as soon as reasonably possible after commencement of employment or as determined by hazard-specific training
- Immediately notify their manager or supervisor upon recognition of any hazard for which they have not received ES&H training

#### 5.1.8.11 Contracted Parties and Users

Contracted parties and users (collectively *non-employees*) will

- Complete all SLAC-specific ES&H training determined necessary for them by their SLAC contact, before beginning work at SLAC
- Immediately notify their SLAC contact upon recognition of any hazard for which they have not received ES&H training

## 5.2 Procedures and Specific Requirements

The following describes detailed training procedures and requirements. Links to implementing documents for most of these requirements can be found in Section 6, “Exhibits”.

### 5.2.1 Establishing Training Requirements

Training requirements are established in the WSS and by SLAC policy and are approved and periodically reviewed by the ES&H division associate director through a formal review process

Program managers identify training needs and submit a new training proposal form to the ES&H Training Subcommittee of the OSC for review and recommendation. Recommendations for training are then submitted to the ES&H division associate director for approval. Training courses are then developed by the appropriate program manager and a learning plan is submitted to the ES&H Training Team. Once the course is ready to present, it is added to the ES&H Training Course Catalog.<sup>20</sup>

### 5.2.2 Assessing Training Requirements for Individuals

A hazard-specific training needs assessment will be performed by managers and supervisors and SLAC contacts to identify ES&H training requirements for each individual under their supervision. This training needs assessment will be performed initially upon employment (or for non-employees before beginning work at SLAC), whenever new hazards are identified in the work area, and at least annually.

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<sup>20</sup> “Training – Course Catalog”, [https://www-internal.slac.stanford.edu/esh-db/training/slaonly/bin/catalog\\_index.asp](https://www-internal.slac.stanford.edu/esh-db/training/slaonly/bin/catalog_index.asp)

Managers and supervisors are responsible for ensuring personnel have received required training commensurate with the hazards to which they are or may be exposed. SLAC contacts are responsible for ensuring personnel under their supervision have been trained in any SLAC-specific hazard.

#### 5.2.2.1 Hazard Identification

##### SLAC Employees

Manager and supervisors must identify and document the hazards to which an employee will be exposed by completing a job hazard analysis and mitigation (JHAM) process for the employee and referring to the area hazard analysis (AHA) documentation for the area(s) in which the employee will be working.<sup>21</sup>

##### Non-employees

In general, SLAC contacts will go through a hazard analysis and mitigation process.

For users and similar non-employees, SLAC contacts will follow the JHAM process.

For contracted parties, a pre-work hazard analysis (PWHA), site-specific safety plan (SSSP), or job safety analysis (JSA) will be used, as determined by the UTR, contract administrator, or project manager. (See Chapter 42, “Subcontractor Construction Safety”,<sup>22</sup> and Chapter 49, “Service Subcontractor Safety”.<sup>23</sup>)

#### 5.2.2.2 Assigning Hazard-specific Training Requirements

Managers and supervisors, and SLAC contacts in the case of non-employees, will assign individual hazard-specific training requirements by

1. Comparing the results of the hazard identification process with requirements listed in the relevant chapters of this manual and the ES&H Training Course Catalog<sup>24</sup>
2. Documenting the required training to be completed

### 5.2.3 Satisfying Training Requirements for Individuals

#### 5.2.3.1 Course Registration and Completion

All personnel register for courses on line via the SLAC Training Registration System.<sup>25</sup> Group registrations are facilitated through the ES&H training database manager.

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21 “Hazard Analysis Programs”, <http://www-group.slac.stanford.edu/esh/general/hazanalysis/>

22 *SLAC Environment, Safety, and Health Manual* (SLAC-I-720-0A29Z-001), Chapter 42, “Subcontractor Construction Safety”, [http://www-group.slac.stanford.edu/esh/hazardous\\_activities/subcon\\_construction/policies.htm](http://www-group.slac.stanford.edu/esh/hazardous_activities/subcon_construction/policies.htm)

23 *SLAC Environment, Safety, and Health Manual* (SLAC-I-720-0A29Z-001), Chapter 49, “Service Subcontractor Safety”, [http://www-group.slac.stanford.edu/esh/hazardous\\_activities/subcon\\_safety/policies.htm](http://www-group.slac.stanford.edu/esh/hazardous_activities/subcon_safety/policies.htm)

24 “Training – Course Catalog”, [https://www-internal.slac.stanford.edu/esh-db/training/slaonly/bin/catalog\\_index.asp](https://www-internal.slac.stanford.edu/esh-db/training/slaonly/bin/catalog_index.asp)

25 SLAC Training Registration System, <https://www-apps.slac.stanford.edu/training/Default.aspx>

Course completions are documented either electronically for certain computer-based training or by reports filled out by computer training administrator and class rosters sent to ES&H Training. The ESH training database manager enters all paper-based training records into the ES&H Training Database.

Courses must be completed in their entirety by personnel in order to fulfill training requirements and receive credit. In the event an individual fails to pass the course exam, when applicable, the process of validation for course credit will be at the discretion of the program manager.

#### 5.2.3.2 No-shows

Personnel who register for a course and do not attend are termed *no-shows*. Home department accounts will be charged the per-student cost for all personnel failing to attend vendor-provided ES&H courses for which they have enrolled. No-shows will be tracked in the ES&H Training Database.

#### 5.2.3.3 Alternatives

##### Challenge Exams

Under certain circumstances, it may be possible to take a written and/or practical examination in lieu of course attendance and receive course credit by passing the examination. Several courses can be challenged by either completing a paper challenge exam or by answering the exam questions in the computer-based training version of the associated course. Other challenge exams may be made available at the discretion of the associated training program manager upon request.

##### Training Transfers

When authorized by the ES&H program manager responsible for that course, a waiver may be granted to a person who is normally required to complete a training course. Personnel may receive credit for training they have received at other institutions. Safety program managers may grant credit after review of the course content. Additional SLAC-specific information may be provided to ensure course equivalences.

##### Variances

For variances to SLAC ES&H training requirements see Chapter 1, “General Policy and Responsibilities”.<sup>26</sup>

## 5.2.4 Providing Training

### 5.2.4.1 Format

ES&H courses are provided in instructor-led, computer-based, or web-based formats.

### 5.2.4.2 Funding

In general, ES&H courses are funded by the ES&H training program. Funding of off-site training that is not facilitated by the relevant ES&H program manager is the responsibility of the department scheduling the

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<sup>26</sup> *SLAC Environment, Safety, and Health Manual* (SLAC-I-720-0A29Z-001), Chapter 1, “General Policy and Responsibilities”, [http://www-group.slac.stanford.edu/esh/general/general\\_policy/policies.htm](http://www-group.slac.stanford.edu/esh/general/general_policy/policies.htm)

training. Special training requests and funding arrangements will be facilitated by the relevant ES&H program manager.

#### 5.2.4.3 Scheduling

ES&H program managers will schedule training classes as necessary to meet the training needs of SLAC personnel. The class schedule is available on line through the SLAC Training Registration System.<sup>27</sup>

#### Waitlists

When there are 10 or more people waitlisted for ES&H training, or one or more people waiting for a course that has not been offered in the last three months, the relevant ES&H program manager will schedule the waitlisted course. Personnel on the waitlist will be notified via e-mail that the course has been scheduled and their names will be removed from the waitlist.

#### 5.2.5 Developing New Courses

All new courses need to be submitted for evaluation to the ES&H Training Subcommittee. A course proposal form must be submitted for all new training programs. This is to ensure the training fits the needs of SLAC and will conform to ES&H training administrative requirements. (See ES&H Course Proposal Form.<sup>28</sup>)

#### 5.2.6 Program Validation

Instructors will be selected and evaluated as described in Training: Instructor Certification Procedure,<sup>29</sup> and Training: Instructor Evaluation Guidelines.<sup>30</sup>

### 5.3 Training

There are no courses specific to the training program. Hazard-specific training requirements are listed in each hazard chapter of this manual. (For training requirements that apply to all personnel, see Training: General Site Access Requirements.<sup>31</sup>)

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27 SLAC Training Registration System, <https://www-apps.slac.stanford.edu/training/Default.aspx>

28 ES&H Course Proposal Form, <http://www-group.slac.stanford.edu/esh/forms/>

29 Training: Instructor Certification Procedure (SLAC-I-720-0A04C-003), <http://www-group.slac.stanford.edu/esh/eshmanual/references/trainingProcedInstructor.pdf>

30 Training: Instructor Evaluation Guidelines (SLAC-I-720-0A04T-001), <http://www-group.slac.stanford.edu/esh/eshmanual/references/trainingGuideInstructor.pdf>

31 Training: General Site Access Requirements (SLAC-I-720-0A04S-001), <http://www-group.slac.stanford.edu/esh/eshmanual/references/trainingReqGeneral.pdf>

## 6 Exhibits

### General

- “ES&H Training”<sup>32</sup>
- Training: Training at SLAC (SLAC-I-720-0A04S-002)<sup>33</sup>

### Site Access Training Requirements

- Training: General Site Access Requirements (SLAC-I-720-0A04S-001)<sup>34</sup>

### Assessing Training Requirements for Individuals

- Training: Needs Assessment Procedures (SLAC-I-720-0A04S-001)<sup>35</sup>
- “Job Hazard Analysis”<sup>36</sup>
- “SLAC Pre-work Hazard Analysis Forms”<sup>37</sup>
- “Training - SLAC Training Assessment”<sup>38</sup>
- “Training – Reports”<sup>39</sup>

### Satisfying Training Requirements for Individuals

- “Training - Restricted Periods”<sup>40</sup>
- “Training Course Catalog”<sup>41</sup>
- SLAC Training Registration System<sup>42</sup>
- SLAC Training Sign-Off Form for Non-SLAC Employees (SLAC-I-720-0A04J-006)<sup>43</sup>
- Stanford Linear Accelerator Center Training Attendance Record<sup>44</sup>

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32 <http://www-group.slac.stanford.edu/esh/training>

33 <http://www-group.slac.stanford.edu/esh/eshmanual/references/trainingChartTraining.pdf>

34 <http://www-group.slac.stanford.edu/esh/eshmanual/references/trainingReqGeneral.pdf>

35 <http://www-group.slac.stanford.edu/esh/eshmanual/references/trainingProcedAssessment.pdf>

36 <http://www-group.slac.stanford.edu/esh/general/hazanalysis/jham.htm>

37 <http://www-group.slac.stanford.edu/esh/forms/pwha.html>

38 <http://www-group.slac.stanford.edu/esh/training/sta/default.htm>

39 <http://www-group.slac.stanford.edu/esh/training/reports.htm>

40 [http://www-group.slac.stanford.edu/esh/training/restricted\\_periods.htm](http://www-group.slac.stanford.edu/esh/training/restricted_periods.htm)

41 [https://www-internal.slac.stanford.edu/esh-db/training/slaonly/bin/catalog\\_index.asp](https://www-internal.slac.stanford.edu/esh-db/training/slaonly/bin/catalog_index.asp)

42 <https://www-apps.slac.stanford.edu/training/Default.aspx>

43 <http://www-group.slac.stanford.edu/esh/forms/>

44 <http://www-group.slac.stanford.edu/esh/forms/>

### Providing Training

- “Procedures for Trainers”<sup>45</sup>
- ES&H Course Proposal Form<sup>46</sup>
- ES&H Lesson Plan Template<sup>47</sup>
- ES&H Course Modification Form<sup>48</sup>
- Training: Instructor Certification Procedure (SLAC-I-720-0A04C-003)<sup>49</sup>
- Training: Instructor Evaluation Guidelines (SLAC-I-720-0A04T-001)<sup>50</sup>
- Training: Instructor Selection, Qualification, and Authorization (ISQA) Form (SLAC-I-720-0A04J-007)<sup>51</sup>

### Feedback

- ES&H Training Customer Service System<sup>52</sup>
- ES&H Training Survey<sup>53</sup>
- Course Evaluation Form<sup>54</sup>

## 7 References

### Management Systems

- *SLAC Integrated Safety and Environmental Management System Description* (SLAC-I-720-0A008-001)<sup>55</sup>

*SLAC Environment, Safety, and Health Manual* (SLAC-I-720-0A29Z-001)<sup>56</sup>

- Chapter 1, “General Policy and Responsibilities”<sup>57</sup>

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45 [http://www-group.slac.stanford.edu/esh/training/new\\_course.htm](http://www-group.slac.stanford.edu/esh/training/new_course.htm)

46 <http://www-group.slac.stanford.edu/esh/forms/>

47 <http://www-group.slac.stanford.edu/esh/forms/>

48 <http://www-group.slac.stanford.edu/esh/forms/>

49 <http://www-group.slac.stanford.edu/esh/eshmanual/references/trainingProcedInstructor.pdf>

50 <http://www-group.slac.stanford.edu/esh/eshmanual/references/trainingGuideInstructor.pdf>

51 <http://www-group.slac.stanford.edu/esh/forms/>

52 <http://remedy.slac.stanford.edu/esh/training.html>

53 <http://www-group.slac.stanford.edu/esh/training/survey.html>

54 <http://www-group.slac.stanford.edu/esh/forms/>

55 <http://www-group.slac.stanford.edu/esh/general/isems/sms.pdf>

56 <http://www-group.slac.stanford.edu/esh/eshmanual/>

- Chapter 2, “Work Authorization”<sup>58</sup>
- Chapter 9, “Radiological Safety”<sup>59</sup>
- Chapter 42, “Subcontractor Construction Safety”<sup>60</sup>
- Chapter 49, “Service Subcontractor Safety”<sup>61</sup>

Other

- *Site Access and Identification Badges Policy and Procedures* (SLAC-I-720-0A0Z-002)<sup>62</sup>
- American National Standards Institute (ANSI) Z490.1-2001, “Accepted Practices in Safety, Health and Environmental Training”<sup>63</sup>

## 8 Implementation

The requirements of this chapter are effective upon publication unless otherwise noted here.

## 9 Ownership

Department: Chemical and General Safety

Program: Training

Owner: Program Manager

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57 [http://www-group.slac.stanford.edu/esh/general/general\\_policy/policies.htm](http://www-group.slac.stanford.edu/esh/general/general_policy/policies.htm)

58 [http://www-group.slac.stanford.edu/esh/general/work\\_authorization/policies.htm](http://www-group.slac.stanford.edu/esh/general/work_authorization/policies.htm)

59 [http://www-group.slac.stanford.edu/esh/general/radiological\\_safety/policies.htm](http://www-group.slac.stanford.edu/esh/general/radiological_safety/policies.htm)

60 [http://www-group.slac.stanford.edu/esh/hazardous\\_activities/subcon\\_construction/policies.htm](http://www-group.slac.stanford.edu/esh/hazardous_activities/subcon_construction/policies.htm)

61 [http://www-group.slac.stanford.edu/esh/hazardous\\_activities/subcon\\_safety/policies.htm](http://www-group.slac.stanford.edu/esh/hazardous_activities/subcon_safety/policies.htm)

62 [https://www-internal.slac.stanford.edu/esh/documents\\_internal/SiteAccess.pdf](https://www-internal.slac.stanford.edu/esh/documents_internal/SiteAccess.pdf)

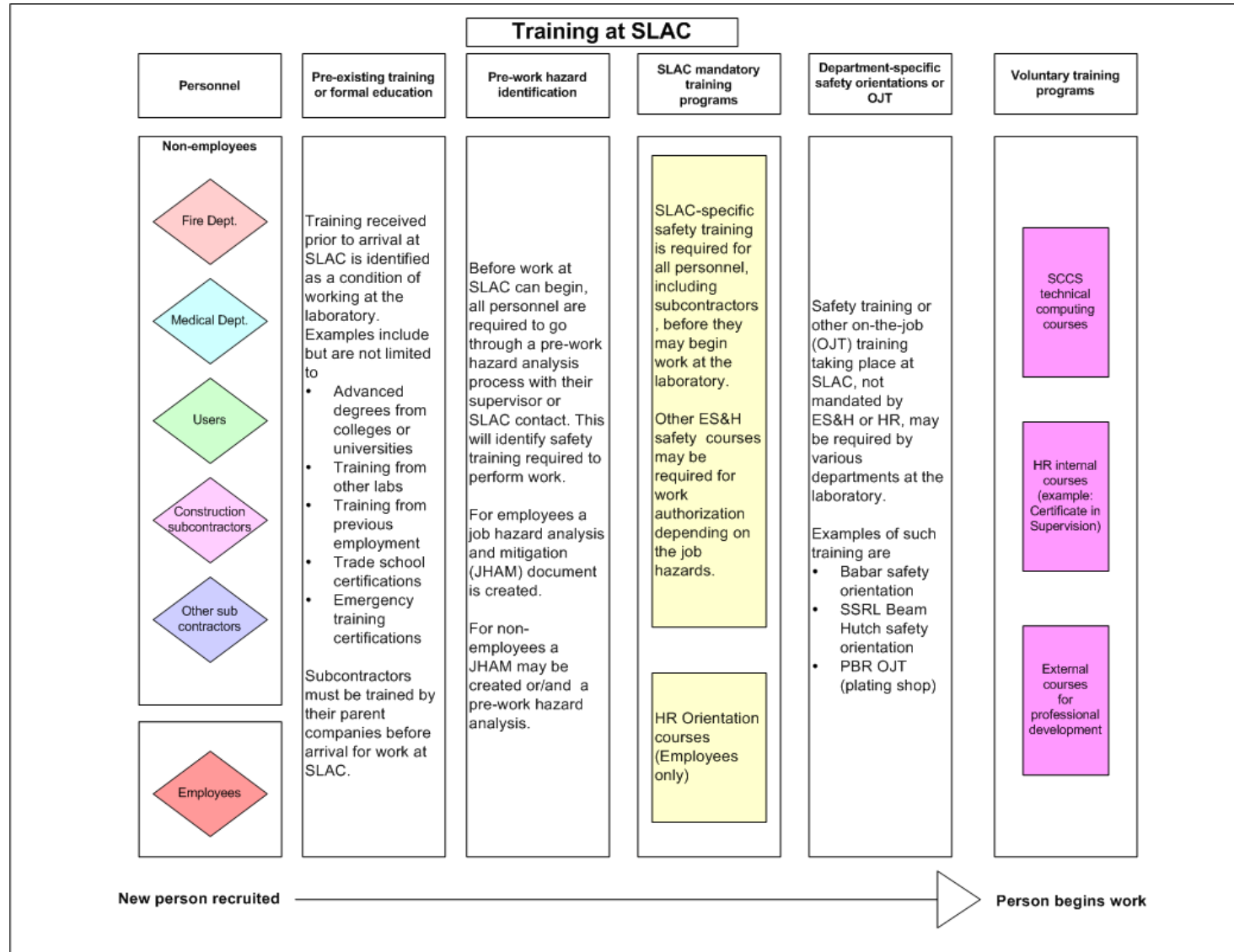
63 See the SLAC Library, <http://www.slac.stanford.edu/library/>, for available standards. For a list of ANSI standards, see the American National Standards Institute “ANSI Electronic Standards Store”, <http://webstore.ansi.org/ansidocstore/>.



# Training: Training at SLAC

Department: Knowledge Management  
 Owner: Program Manager, Paul Bloom

Program: Training  
 Authority: ES&H Manual, Chapter 24, Training





# Training: Minimum Training Requirements

URL: <http://www-group.slac.stanford.edu/esh/eshmanual/references/trainingReqGeneral.pdf>

Revision Record: <https://www-internal.slac.stanford.edu/esh/docreview/reports/revisions.asp?ProductID=302>

Department: Industrial Hygiene and Information Management

Program: Training

Authority: [ESH Manual, Chapter 24, Training](#)

Date Effective: 20 November 2009

## 1 Purpose

The purpose of these requirements is to ensure that everyone has the minimum training necessary to perform his or her role safely. A safety orientation course is mandatory for everyone except escorted visitors and certain service personnel, as described below.

## 2 Scope

These requirements cover only the minimum training for all classes of employees and non-employees. The minimum requirements are based on how long a person will be on site and which areas they will need to access without a qualified escort.

Additional training requirements may apply depending on hazards associated with the work to be performed and/or controlled areas that will be accessed. For more information see the hazard-specific chapter(s) in the [ESH Manual](#) and SLAC ESH courses listed in the [ESH Course Catalog](#).

## 3 Applicability

These requirements apply to all persons on-site.

## 4 Requirements

The following table summarizes minimum training requirements for specified groups based on employment status.

*Note*      *The work planning and control (WPC) schema designates work activities into green, red, and yellow. For more information on WPC training and documentation requirements, see [Chapter 2, “Work Planning and Control”](#).*

Table 1 Minimum Training Requirements

Employment Status	Safety Orientation	Work Planning and Control	Unescorted Access to Radiological Areas
SLAC employees and anyone <sup>1</sup> who will be at SLAC for 60 days or more in a one-year period	<a href="#">ESH Course 219</a>	If you perform green work in non-office areas take <a href="#">ESH Course 121</a> If you supervise or perform yellow or red work take <a href="#">ESH Course 120</a>	Applies to everyone: For access into a controlled area or radiologically controlled area, take <a href="#">ESH Course 115</a>
Anyone <sup>1</sup> who will be at SLAC less than 60 days in a one-year period and does not fall into the categories listed below	<a href="#">ESH Course 396</a> Electrical safety training may be required: Check <a href="#">ESH Course 239</a> for equivalents and exemptions		For access into a radiation area, high radiation area, or radiological buffer area, take <a href="#">ESH Course 116</a>
Subcontracted construction workers	<a href="#">ESH Course 375</a>		
Escorted visitors	<ul style="list-style-type: none"> <li>▪ No training required but must follow escort requirements for the area type</li> <li>▪ Must wear dated visitor ID</li> </ul>		Other requirements apply. For additional information, see <a href="#">Radiological Safety: Dosimetry and Training Requirements for Entry into Posted Areas</a>
Exempt service workers (includes most types of service personnel who perform routine activities such as FedEx or UPS delivery, office machine repair, emergency medical)	<ul style="list-style-type: none"> <li>▪ Must not perform high risk tasks</li> <li>▪ Must remain outside industrial areas and posted radiological areas unless accompanied by a qualified escort</li> </ul>		

<sup>1</sup>Includes users, emeritus staff, collaborators, visiting scholars, scientists, researchers, students, and other invited guests

## 5 References

- *SLAC Environment, Safety, and Health Manual* (SLAC-I-720-0A29Z-001), [Chapter 24, “Training”](#)
- [Chapter 2, “Work Planning and Control”](#)
- [Radiological Safety: Dosimetry and Training Requirements for Entry into Posted Areas](#) (SLAC-I-760-0A05S-002)
- ESH Course 219, Employee Orientation to Environment, Safety and Health (EOESH) ([ESH Course 219](#))
- ESH Course 396, Safety Orientation for Non-SLAC Employees (SON) ([ESH Course 396](#))
- ESH Course 375, Safety Orientation for Construction Contractors (SOC) ([ESH Course 375](#))
- ESH Course 239, General Electrical Safety Training ([ESH Course 239](#))
- ESH Course 115, General Employee Radiological Training (GERT) ([ESH Course 115](#))
- ESH Course 116, Radiological Worker I Training (RWT I) ([ESH Course 116](#))
- ESH Course 120, Work Planning and Control Overview ([ESH Course 120](#))
- ESH Course 121, WPC Overview for Green Workers in Non-Office Areas ([ESH Course 121](#))
- [ESH Course Catalog](#)

23 September 2009

This document, Training: Needs Assessment Procedures (SLAC-I-720-0A04S-001), is being revised.

Current information on access requirements for radiological areas can be found in this document: [Training: Minimum Training Requirements](#) (SLAC-I-720-0A04S-001)

For questions, contact the [ESH Training Group](#).



# Training: Instructor Certification Procedure

Department: Knowledge Management

Program: Training

Owner: Program Manager, Paul Bloom

Authority: ES&H Manual, Chapter 24, Training

## ***Purpose***

This procedure describes the selection, qualification, and authorization of classroom instructors for ES&H courses.

## ***Scope***

This procedure applies to classroom instructors who provide instruction to personnel using training materials designed and/or developed by or for the ES&H training program. It also sets forth requirements for the qualification of training vendors.

## ***Qualifications***

### **Instructors**

Individuals are qualified as instructors in one or both of the following ways:

1. **Instructor Training Course.** The candidate provides certification that he or she completed an instructor training course. A refresher training course every two years is recommended.
2. **Demonstration.** The candidate successfully demonstrates his or her instructional capabilities relative to training program standards (see Training: Instructor Evaluation Guidelines<sup>1</sup>).

### **Training Vendors**

The training program may, by agreement with the manager of the relevant ES&H program, use outside vendors as instructors. This is typically done to supplement the technical content of a course. The program manager will identify the appropriate vendor and validate qualifications. The training program manager will review the qualifications and approve the candidate.

### ***Certification***

Vendors must meet Department of Energy (DOE), Occupational Safety and Health Administration (OSHA), and/or other state or federal certification to be approved as training vendors at SLAC.

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1 Training: Instructor Evaluation Guidelines (SLAC-I-720-0A04T-001), <http://www-group.slac.stanford.edu/esh/eshmanual/references/trainingGuideInstructor.pdf>

## Training: Instructor Certification Procedure

### *Observation*

The program manager is responsible for observing the vendor's training presentation before they are certified to teach at SLAC to ensure that the course content and the instructor skills meet SLAC standards for training (see Training: Instructor Evaluation Guidelines<sup>2</sup>).

### **Procedure**

Step	Person	Action
1.	Program manager/ training program manager	Nominates instructor candidate because <ul style="list-style-type: none"><li>• A new course is being developed (program manager identifies candidate based on technical expertise and proficiency in the subject)</li><li>• An existing instructor position has been vacated (training program manager identifies need)</li></ul>
2.	Program manager	Identifies instructor candidate and documents qualifications using the Training: Instructor Selection, Qualification, and Authorization (ISQA) Form <sup>3</sup>
3.	Program manager	Submits ISQA form to training instructional designer
4.	Training instructional designer	Review candidate's course completion/re-qualification record to determine instructor capabilities and completes Part I of the ISQA form
5.	Training instructional designer	Consults with program manager regarding the candidate's technical expertise/proficiency and completes Part II of the ISQA form
6.	Training instructional designer	Forwards the completed ISQA form with any supporting documentation to the training program manager for authorization and assignment
7.	Training program manager	Reviews ISQA form and approves by completing Part III <ul style="list-style-type: none"><li>• If special circumstances require that approval is needed for an outside vendor, completes Part IV</li></ul>

2 Training: Instructor Evaluation Guidelines (SLAC-I-720-0A04T-001), <http://www-group.slac.stanford.edu/esh/eshmanual/references/trainingGuideInstructor.pdf>

3 Training: Instructor Selection, Qualification, and Authorization (ISQA) Form (SLAC-I-720-0A04J-007), <http://www-group.slac.stanford.edu/esh/forms/>

## Training: Instructor Certification Procedure

Step	Person	Action
		<ul style="list-style-type: none"> <li>If has questions or objections to the appointment of the instructor candidate, discusses with the nominating program manager</li> </ul>
8.	Training program manager	Forwards the completed ISQA form to the training data manager
9.	Training data manager	<p>Adds the new instructor to the PeopleSoft database and files the ISQA form in the training program document control file. Completed forms are retained in accordance with ES&amp;H records management policies and procedures.</p> <p><i>Note The information on the ISQA form is reviewed every two years and updated as needed</i></p>
10.	Training instructional designer	Maintains the Trainer Qualifications spreadsheet



# **Training: Instructor Evaluation Guidelines**

Department: Knowledge Management

Program: Training

Owner: Program Manager, Paul Bloom

Authority: ES&H Manual, Chapter 24, Training

## ***Purpose***

This document is designed to outline the standards used to qualify and evaluate ES&H trainers at SLAC.

## ***Qualification Criteria***

Qualification requirements for trainers include

- Instructional skills
- Technical competence
- Interpersonal skills

## ***Instructional Skills***

Instructor skills are the unique knowledge and skills necessary to perform instructional activities.

### ***Standard***

Entry-level education, training, and experience of the instructor must be considered when selecting an instructor for a course. Instructors should have the necessary training to develop, present, and evaluate training programs efficiently and effectively.

Instructors are expected to participate in continuing development programs that maintain and improve instructional skills.

## ***Technical Skills***

The technical skills of an instructor should include theoretical and practical knowledge.

### ***Standard***

Practical work experience at or above the level that is required of the trainee population is strongly desired. Evaluation of technical skills will include review of academic degrees and or certificates in the field of expertise as well as work experience.

It is expected that instructors perform satisfactory work within their subject matter area of expertise and participate in continuing technical training in the subject or discipline that they teach. Personnel who provide site-specific training must retain a current knowledge of on-site events and changes.

## **Interpersonal Skills**

The interpersonal skills required of an instructor include the ability to develop and provide effective training. Among the interpersonal skills that impact instructional effectiveness are communication skills and a positive demeanor.

### *Standard*

Instructors should possess strong communication skills. The ability to organize and present information that is received as intended is crucial. Other skills include the ability to listen to questions, phrase questions that stimulate learning, and deal effectively with conflict.

It is essential that instructors demonstrate leadership qualities, convey a positive attitude toward training, and promote professionalism in the work environment.

## **Evaluating Qualification Criteria**

The above instructor competencies are verified by

- A review of prior training, education, and work experience
- Observations and evaluation of classroom performance, including trainee feedback

(See Training: Instructor Certification Procedure for more detail.<sup>1</sup>)

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1 Training: Instructor Certification Procedure (SLAC-I-720-0A04C-003), <http://www-group.slac.stanford.edu/esh/eshmanual/references/trainingProcedInstructor.pdf>

# Training: Instructor Selection, Qualification, and Authorization (ISQA) Form

Department: Knowledge Management

Program: Training

Owner: Program Manager, Paul Bloom

Authority: ES&H Manual, Chapter 24, Training

See Training: Instructor Certification Procedure for steps to follow.<sup>1</sup>

## Nomination

Based on my observations and evaluations of related job experience, I nominate this individual to teach the following ES&H course:

Instructor Candidate Name: \_\_\_\_\_

Course Name: \_\_\_\_\_

Course No. \_\_\_\_\_

Nominated by

Program Manager Name: \_\_\_\_\_

Date: \_\_\_\_\_ Signature: \_\_\_\_\_

## Part I: Instructor Qualification

Qualification method:

Certification

Experience

Instructor Trainer Course

## Part II: Technical Competency

Based on my consultation with the program manager and a review of prior training, education, and work experience I recommend this individual to teach the following ES&H courses:

ES&H Training Instructional Designer Name: \_\_\_\_\_

Date: \_\_\_\_\_ Signature: \_\_\_\_\_

## Part III: Instructor Approval

Based on this individual's documented instructor qualification and technical competency, I authorize this individual to teach the aforementioned ES&H courses.

ES&H Training Program Manager Name: \_\_\_\_\_

Date: \_\_\_\_\_ Signature: \_\_\_\_\_

## Part IV: Training Vendor Approval

Based on my assessment of this vendor's qualifications and technical competency, I authorize this vendor to teach the aforementioned ES&H courses.

ES&H Training Program Manager Name: \_\_\_\_\_

Date: \_\_\_\_\_ Signature: \_\_\_\_\_

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<sup>1</sup> Training: Instructor Certification Procedure (SLAC-I-720-0A04C-003), <http://www-group.slac.stanford.edu/esh/eshmanual/references/trainingProcedInstructor.pdf>