CCEE Safety and Health Committee-Mandated
Training for CCEE Laboratory Access and at Completion of Lab Work
Updated January 25, February 22, March 22, April 26, and May 24, 2018

Introduction: Section 1.1 of the *CCEE Research and Instructional Laboratories and Field Work Safety Policies and Guidelines* document links access to CCEE laboratory spaces with specific training requirements detailed in this document, which is maintained by the CCEE Safety and Health Committee. As noted at Section 1.1.4 of the policies document, these requirements also extend to individuals conducting work on behalf of CCEE outside of Town Engineering.

The Safety and Health Committee has decided that there will be two factors used to determine required training for *any* individual requesting access to *any CCEE-controlled* laboratory space.

The first factor is whether the requesting individual's access will require that a key be checked out to them and/or require a swipe of their ID card at the lab door.   *All* key or swipe card access provided to *any* individual for *any CCEE-controlled* laboratory space requires proof that the requesting individual has completed *all* the CCEE Safety and Health Committee-mandated training detailed in Table 1. The online courses listed in Table 1 will take an individual between 4-6 hours to complete if none of these trainings is in their current training record.

If the individual is not requesting key or swipe card access, but is requesting permission to work in *CCEE-controlled* laboratory space, their specific affiliation with Iowa State University will be the second factor used to determine their required access-specific training.

For individuals who need to work in *CCEE-controlled* laboratory space to complete assigned activities for an ISU course within which they are currently enrolled, the instructor of the course will determine their safety training requirements as described at Section 1.1.5 of the policies document. This instructor-led safety requirements determination is made in consultation with the cognizant lab manager or coordinator of the lab space and the CCEE Safety and Health Committee in advance, and is documented by the committee.

In *all other cases*, the requesting individual must complete *all* the CCEE Safety and Health Committee-mandated training detailed in Table 1 prior to beginning their work in any *CCEE-controlled* laboratory space or in the field on behalf of CCEE. (Examples include: CCEE faculty, staff and student researchers or lab employees, researchers from other departments at ISU, researchers from other universities visiting ISU, individuals formally volunteering to conduct work at ISU that will involve time spent in CCEE-controlled lab space, etc.)

Identification of Additional Training and Notification Requirements
In accordance with Section 2.1 of the policies document, the cognizant lab manager(s) or coordinator(s) for the space(s) within which the requesting individual will work will need to understand the anticipated scope of the requester's research work in *CCEE-controlled* lab space

they manage and/or in the field on behalf of CCEE.   They will use this information to consider whether additional training beyond the CCEE Safety and Health Committee-mandated training detailed in Table 1 will be required of the requester.   Moreover, in accordance with Section 1.4 of the policies document, the lab manager(s)/coordinator(s) will also coordinate development of and training to relevant standard operating procedures (SOPs) for the requestor's laboratory and field work operations.

Although not a training requirement, at Section 1.5 of the policies document, a link is given for the EH&S online hazard inventory form that *all employees* must fill out prior to conducting lab/field work. Research employees shall also take the responsible conduct of research training online through the Office of Risk Management as noted at Section 1.8.1 of the policies.

Table 1: CCEE Safety and Health Committee-Mandated Online Training Requirements for Lab Access

Learn@ISU Course ID	Course Name	Requirement Details	Time Requirement
1. EHS-LSG-CORE-2016-ON	Laboratory Safety: Core Concepts	Mandatory	~60 minutes
2. EHS-LAB-CHSTOR-2017-ON	Laboratory Safety: Chemical Storage	Mandatory	~30-45 minutes
3. EHS-LAB-SPILL-2017-ON	Laboratory Safety: Spill Procedures	Mandatory	~30-45 minutes
4. EM-ERG-VIDEO-2014-ON	Emergency Response Guide Video	Mandatory	~15 minutes
5. EHS-HLS-FIRE-2015-ON	Fire Safety and Fire Extinguisher Training	Mandatory	~30-60 minutes
6. ACD-COE-FOSS-2014-ON	Shop Safety Fundamentals - Basic Procedures and Policies	Mandatory	~30-60 minutes
7. CCEE-SAFE-POLICIES-ON	CCEE Research and Instructional Laboratories and Field Work Safety Policies and Guidelines	Mandatory	~30-45 minutes
8. CCEE-SAFE-CHECK-ON	CCEE Laboratory and Field Work Safety Checklist FOR TRAINEE	Mandatory	~5-10 minutes
9. CCEE-LAB-ORIENT-HSO	Laboratory and Field Work Safety Checklist FOR LAB MANAGER/COORDINATOR	Mandatory Dual Sign-Off	~5 minutes

Total Training Time Requirement: **235 to 345 min.**

Fulfilling Course Requirements

CCEE has developed a customized online training and tracking area to provide a linkage between the ISU learning management systems, CANVAS and Learn@ISU, which will become the primary means of administering required training from May 2018 forward. The linked platform hosts CCEE-developed training modules, SOPs and other resources for assignment to students, faculty, staff and other users of department laboratory resources. Individuals access the courses listed in Table 1 by logging into Learn@ISU using their ISU net ID and password at https://training.ehs.iastate.edu/IowaSU/site/.

Lab managers in CCEE will assign the training in Table 1 and additional required trainings, including SOPs, hosted on Learn@ISU using Canvas. Individuals who wish to access a specific CCEE lab, must first request that they be given access to the training area(s) set up in Canvas for the lab(s) they wish to access (see Table 2). The lab manager(s) or coordinator(s) of the lab(s) the individual wishes to access can provide the invitation to the training areas by including the individual as a "student" within Canvas. The individual will then receive an email invitation to the "course" and must accept the invitation using Canvas (accessible through https://web.iastate.edu/signons/) in order to allow the lab manager to begin tracking their fulfillment of training requirements within Canvas. Any courses that the requesting individual has already taken that are not expired will automatically be reflected in their record. The CCEE Operations Assistant, Emma Estrada, verifies that all training requirements are met and are current (for those trainings that expire) prior to checking out a key or programming swipe card access for each individual requesting specific CCEE lab access.

Additional Requirements When You Complete Your Work in CCEE Labs

As noted at Section 3.0 of the policies document, when you have finished your program of work within CCEE labs and no longer need access to them, a number of check-out items are requested of you. To record your completion of this check-out process, please complete the online course, CCEE-LEAVE-CHECK-ON, checklist for completion of individual's work in CCEE labs, at Learn@ISU. Similar to the CCEE-LAB-ORIENT-HSO course in Table 1, this checkout course uses a dual sign-off procedure that requires electronic signatures from you and your supervisor or his/her designee.

Appendices

This document describes training that *every individual* affiliated with CCEE who will work in any CCEE Town Engineering lab, lab outside of Town Engineering (e.g., labs in other buildings on campus, a field-deployed lab such as the Geotechnical Mobile Laboratory, or the new CCEE Residential Test Facility) or the field must take. Rationale for inclusion of the courses in Table 1 to the list of mandated training requirements is provided for each course in Appendix A. Appendix B details those courses that were previously included on the list, but dropped for the reasons stated. The Appendix A and B lists were last reviewed by the CCEE Safety and Health Committee on January 25, 2018.

Table 2: Current CCEE Training Areas Set Up in Canvas Serving CCEE Focus Area Labs

Canvas Training Area	Current Lab Manager/Coordinator	CCEE Focus Area
Room 34 Town	Ted Huisman – Lab Manager	Geotechnical/Materials
Room 40 Town	Ted Huisman – Lab Manager	Geotechnical/Materials
Room 42 Town	Ted Huisman – Lab Manager	Geotechnical/Materials
Room 55 Town	Paul Kremer - Coordinator	Environmental/Water
Room 112 Town	Paul Kremer - Coordinator	Environmental/Water
Room 116 Town	Paul Kremer - Coordinator	Environmental/Water
Room 120 Town	Paul Kremer - Coordinator	Environmental/Water
Room 122 Town	Paul Kremer - Coordinator	Environmental/Water
Room 123 Town	Paul Kremer - Coordinator	Environmental/Water
Room 124 Town	Paul Kremer - Coordinator	Environmental/Water
Room 130 Town	Doug Wood – Lab Manager	Structures
Room 138 Town	Robert Steffes – Lab Manager	Geotechnical/Materials
Room 142 Town	Ted Huisman – Lab Manager	Geotechnical/Materials
Room 147 Town	Paul Kremer - Coordinator	Geotechnical/Materials
Room 148 Town	Ted Huisman – Lab Manager	Geotechnical/Materials
Room 155 Town	Paul Kremer - Coordinator	Environmental/Water
Room 156 Town	Ted Huisman – Lab Manager	Geotechnical/Materials
Room 159 Town	Paul Kremer - Coordinator	Environmental/Water
Room 159A Town	Paul Kremer - Coordinator	Environmental/Water
Room 159B Town	Paul Kremer - Coordinator	Environmental/Water
Room 159C Town	Paul Kremer - Coordinator	Environmental/Water
Room 159D Town	Paul Kremer - Coordinator	Environmental/Water
Room 159E Town	Paul Kremer - Coordinator	Environmental/Water
Room 159F Town	Paul Kremer - Coordinator	Environmental/Water
Room 160 Town	Ted Huisman – Lab Manager	Geotechnical/Materials
Room 162 Town	Doug Wood – Lab Manager	Structures
Room 164 Town	Doug Wood – Lab Manager	Structures
Room 168 Town	Paul Ledtje – Lab Manager	Geotechnical/Materials
Room 175 Town	Paul Kremer - Coordinator	Geotechnical/Materials
Room 177 Town	Paul Kremer - Coordinator	Structures
Smart Building Test Facility	Paul Kremer - Coordinator	Construction

**Appendix A: Full Description of Courses and Rationale for Their Inclusion
in The List of Mandatory Trainings by The CCEE Safety and Health Committee**

1. EH&S Laboratory Safety: Core Concepts *(Taken online; tracked electronically in Learn/Canvas)*
   a. Rationale for the course—this course covers the EH&S laboratory safety program with good depth, and is required by EH&S for all laboratory personnel with retraining required every 3 years.
   http://www.ehs.iastate.edu/publications/handouts/labcurriculum.pdf is the EH&S safety training curriculum for laboratory personnel matrix that shows core required courses and other strongly recommended courses.

2. EH&S Laboratory Safety: Chemical Storage *(Taken online; tracked electronically in Learn/Canvas)*
   a. Rationale for the course—the majority of CCEE labs have stored chemicals, and most CCEE lab researchers will on occasion come into contact with chemicals during the course of their work. This is one of the strongly recommended courses by EH&S
   http://www.ehs.iastate.edu/publications/handouts/labcurriculum.pdf.

3. EH&S Laboratory Safety: Spill Procedures *(Taken online; tracked electronically in Learn/Canvas)*
   a. Rationale for the course—All CCEE labs have stored chemicals and in some instances other materials that pose some potential as a spill hazard. The committee views knowledgeable response to spill events as a necessity for all individuals working in CCEE labs. This is one of the strongly recommended courses by EH&S
   http://www.ehs.iastate.edu/publications/handouts/labcurriculum.pdf.

4. EH&S Emergency Response *(Taken online; tracked electronically in Learn/Canvas)*
   a. Rationale for the course— this course is required by EH&S for all laboratory personnel with retraining required every 3 years per
   http://www.ehs.iastate.edu/publications/handouts/labcurriculum.pdf.

5. EH&S Fire Safety and Extinguisher Training *(Taken online; tracked electronically in Learn/Canvas)*
   a. Note: Learners who want to practice using a fire extinguisher can attend the final 20 minutes of the classroom version of this course, which can be scheduled through Learn@ISU to receive hands-on fire extinguisher training.
   b. Rationale for the course— this course is required by EH&S for all laboratory personnel with retraining required annually per
   http://www.ehs.iastate.edu/publications/handouts/labcurriculum.pdf.

6. **EH&S Shop Safety Fundamentals – Basic Procedures and Policies** *(Taken online; tracked electronically in Learn/Canvas)*
    a. <u>Rationale for the course</u>—All CCEE labs have projects undertaken within them that involve fabrication work. Most researchers at some point will do some of this fabrication work within the lab they work or use resources (e.g., power tools) within other CCEE and ISU labs. The committee views knowledge of shop safety precepts as a necessity for all individuals working in CCEE labs.

7. **CCEE Research and Instructional Laboratories and Field Work Safety Policies and Guidelines** *(Taken online; tracked electronically in Learn/Canvas)*
    a. EH&S suggested that this custom training module, developed collaboratively with them for the CCEE Research and Instructional Laboratories and Field Work Safety Policies and Guidelines document, can serve as a good mandatory safety orientation training for CCEE that exceeds what is provided in their own Orientation course for incoming graduate students each year.
    b. This training does not have a specific retraining requirement, and the CCEE Health and Safety committee has not set a retraining policy.

8. **CCEE Laboratory and Field Work Safety Checklist FOR TRAINEE** *(Taken online; tracked electronically in Learn/Canvas)*
    a. <u>Process and Rationale for the course:</u> trainee agrees to the statements in the online checklist hosted on Learn@ISU. Prior to approving key/swipe card access, the lab manager/coordinators for each space within which the trainee will work must provide orientation and sign-off electronically with the trainee that the orientation has been provided. See Course 9.

9. **CCEE Laboratory and Field Work Safety Checklist FOR LAB MANAGER/COORDINATOR** *(Taken online; tracked electronically in Learn/Canvas)*
    a. <u>Process and Rationale for the course:</u> prior to allowing an individual to work in the lab(s) and/or on field work they manage or oversee, the lab manager/coordinator or their approved designee must provide orientation to the trainee and electronically sign the orientation checklist on the Learn@ISU CCEE Training and Tracking Platform. The Trainee must also electronically sign with the lab manager/coordinator to acknowledge that they received the orientation. The orientation is required prior to approving keys/swipe card access for the trainee.

**Appendix B: Courses dropped from
the list of mandatory trainings by CCEE**
Updated January 25, 2018

Courses dropped from consideration at the January 25, 2018 CCEE Safety and Health
Committee meeting for the reasons stated.

1. EH&S Laboratory Safety: Orientation (*Instructor led, and requires scheduling through EH&S*)
    a. <u>Process and Rationale for the course:</u> trainee schedules this course through
       Learn@ISU. It is an instructor led course offered by EH&S annually in August for
       incoming graduate students.
    b. It's a good course for new graduate student laboratory researchers to take if
       they can get into it, but CCEE's new guidelines and policies document is more
       comprehensive and can be taken on demand.
2. EH&S Laboratory Safety: Compressed Gas Cylinders *(Taken online)*
    a. Although many of CCEE labs use compressed gas cylinders, the committee
       believes that the best approach is to have lab managers assign this training to an
       individual if their work will include the use of compressed gases as
       recommended by EH&S at
       http://www.ehs.iastate.edu/publications/handouts/labcurriculum.pdf.
    b. Assignment of this training will occur when lab managers review the training
       needs of individuals working in the spaces they manage at both the outset of
       their work in CCEE labs and whenever any changes in the scope of an individual's
       work warrants completion of additional assigned training.
3. EH&S Laboratory Safety: Laboratory Inspections *(Instructor led, and requires scheduling
   through EH&S)*
    a. Because this training is only offered about twice per year at the EH&S building
       and would cost CCEE to have the course administered in the Town Engineering
       Building (per the EH&S services and fees schedule
       https://www.ehs.iastate.edu/sites/default/files/uploads/publications/miscdocs/
       fee-schedule.pdf), it is not practical to mandate it as a required course for access
       to CCEE lab spaces.
    b. Although all in CCEE labs have a role to play in laboratory inspections (both self-
       audits and EH&S-scheduled inspections), the committee believes that the best
       approach is to have lab managers assign this training to an individual if their
       work will include more direct involvement with lab inspections as recommended
       by EH&S at
       http://www.ehs.iastate.edu/publications/handouts/labcurriculum.pdf.
    c. Assignment of this training will occur when lab managers review the training
       needs of individuals working in the spaces they manage at both the outset of
       their work in CCEE labs and whenever any changes in the scope of an individual's
       work warrants completion of additional assigned training.