VCCS Guidance on Best Practices Safety Inventory for High Risk Instructional Programs

Item 1: Develop written policies for supervision of students in labs

Policies must be in place for supervision of students in labs. If a student needs additional time on equipment to perform work, the instructor or lab manager (whose job description and qualifications include supervision) should be present to supervise. Additionally, if the instructor must step out of the lab for any reason during class time, students should stop working and power down equipment. Any exceptions should be documented in the policy and have approval from appropriate parties such as instructors, deans, and vice presidents. Appropriate supervision of students is necessary to ensure safe procedures are practiced to prevent accidents and to respond immediately in case of an accident.

Item 2: Emphasize existing policies requiring instructors of industrial technology programs to stay current in their industry

Current policies requiring instructors of industrial technology programs to stay current in their industry should be emphasized by the colleges. These policies require instructors to keep up with current practices and requirements related to safety as new technologies and methods are developed. Several options are available in achieving the goal of ensuring industry currency:

- Require certification through professional organizations in their fields for full-time instructors, when certifications are available.
- Require continuing professional education.
- Read and study textbooks that are written or endorsed by industry organizations.
- Maintain a business related to the program the instructor is teaching
- Utilize advisory councils for support and information (certificates and degrees)

Item 3: Develop written policies that require written manuals related to safety in labs and classrooms

Policies must be in place requiring written manuals related to safety in labs and classrooms. Lab safety protocols (whether standards of industry, standard-setting organizations or based on industry standards) should be current and included in the manual, shared with students, and followed by instructors, staff, and students to establish class rules and set expectations. Following industry standards may not be sufficient. Safety standards promulgated by OSHA and other standards-setting bodies are designed for experienced professionals; therefore, these standards may not be adequate for inexperienced students. For example, while industry standards only require non-flammable clothing while welding, colleges should consider requiring welding smocks or aprons to further protect students. Additionally, industry standards do not forbid welding or machining while alone, but students should not be left unsupervised in the labs.

Item 4: Develop written policies regarding personal projects in labs

Policies must be in place specifying rules and guidelines related to the use of personal projects in labs. Instructors who allow personal projects for repair state that the experience provides a

positive learning opportunity for the student, as the student will apply lessons learned in class to improve the item. Personal projects should only be allowed if their use provides a learning experience to the entire class and does not benefit one individual person. In some cases, these projects are the only non-simulation projects available to the students. Colleges should consider the fraud and safety risks of allowing any personnel (students, instructors, or staff) to work on personal projects in labs using state-owned equipment.

Item 5: Include safety requirements in instructor evaluation forms

Colleges should incorporate safety components in the annual evaluation of instructors and in student evaluations of instructors. Instructors should be evaluated on whether they are teaching and practicing current, appropriate safety standards, as well as receiving current professional training in their field.

Item 6: Develop written policies that require written classroom and lab rules of behavior

Policies should exist requiring colleges to create a signed code of conduct (code) listing rules of behavior for students in industrial programs, indicating they will follow and practice all safety policies taught in class. The code should include requirements related to student behavior in general and be consistent with existing college policies. The code should include sanctions, beginning with intermediate sanctions and progressing to dismissal from a class period, class, or program if warranted. Instructors must be able to enforce such sanctions in order to make the code effective.

Item 7: Develop written policies that require instructors to be familiar with emergency equipment

Policies should exist that require instructors in industrial technology programs be familiar with emergency equipment. For example, welding instructors should be comfortable with a fire extinguisher and electrical instructors should know how to use an AED. Although this familiarity may apply most to those in hands-on industrial technology programs such as electricity and welding, skills learned will benefit all instructors and persons involved in case of an emergency.

Item 8: Develop written policies that require students to pass a safety test before working in labs

Policies should exist for classes in industrial technology programs to include documented safety tests. Colleges should enforce the policy and hold students accountable for passing safety tests before working in labs. If possible, safety tests should be promulgated by industry governing bodies or professional organizations. For critical safety questions missed, or when a test is failed, instructors should either require re-taking of the test or questions or work with the student one-on-one to understand the core concept. If the instructor chooses to work with the student rather than utilize a written re-test, results should be documented to provide evidence that the student understands the concept.

Item 9: Develop written policies that utilize advisory councils in certificate and degree programs to examine safety-related topics in current industries

Policies should exist requiring active involvement of advisory councils at the college. Advisory councils should meet at least annually, provide input on curriculum, and discuss safety topics seen in current industry. Advisory council membership should be inclusive to avoid the appearance of a conflict of interest.

Item 10: Develop written policies that require student emergency training and awareness in classes

Policies should exist requiring the inclusion of student emergency training and awareness in classes with specific risks of fire, electrocution, or injury to reduce likelihood of confusion and panic during extreme situations. Students should be trained on the use of fire blankets, fire extinguishers, emergency kill-switches, conduits in the case of an electrocution, and other necessary materials and methods to provide safe, immediate protection of students, instructors, and the facility. Basic first aid could also be included, such as use of an AED. Training in basic response to specific industry risks can be helpful in the classroom (and ultimately on the jobsite) and increase student preparation for jobs after completing the program.

Item 11: Develop written policies that require instructors to provide information on and stress importance of safety in course syllabi

Policies should exist necessitating syllabi indicate safety is part of the student's grade through the use of lessons, tests, and general practices to ensure safety is emphasized. Furthermore, the syllabi should indicate where safety standards originate, such as professional organizations and governing bodies. The syllabi should serve as "contracts" for the classroom between the teacher and student. Including this information in the syllabi enhances the student's knowledge and allows the student to tie classroom procedures to those practiced in industry. Implementation also provides students with the opportunity to further research standards if they desire.

Item 12: Develop written policies that require instructors to include a listing in course syllabi of all safety equipment

Policies should exist which state that all safety equipment be clearly listed in the syllabi. For example, equipment such as safety glasses, close-toed shoes, gloves, and cotton shirts may be required, whereas leather jackets and earplugs may be merely recommended. Specifying the PPE and other safety-related information clearly on the syllabi sets expectations for students on how to dress appropriately and safely.

Item 13: Develop written policies that require clean, organized labs and properly displayed safety signage

Policies should exist requiring all labs be kept organized, neat, and clean to meet OSHA standards. Clean and organized work areas are necessary to prevent injury and incidents. Additionally, safety signage should be appropriately displayed. Signs help establish guidance in situations such as: where it is safe to stand, directions toward the nearest exit, and equipment

available in case of an emergency. Signs can also warn visitors of the immediate dangers in the area and whether protective gear should be worn.

Item 14: Develop written policies that require documentation of equipment inspections

Policies should exist that require instructors to inspect equipment before and during the semester to detect problems and ensure safe use. Further, documentation of inspections should be kept to track timing of inspections and necessary maintenance. Instructors should also follow guidelines from equipment manufacturers. Even if equipment is normally inspected on an ongoing basis, we recommend routine, documented inspections using industry criteria and a checklist or other method of documentation.

Item 15: Develop written policies that require instructors to enforce practices written in course syllabi

Policies should exist which require instructors to enforce practices written in the syllabus. The class syllabus serves as a course guide and outline for the student, and acts as an easy reference of class rules. If the syllabus states that "Safety glasses must be worn at all times while in the lab," all students, assistants, guests and instructors should always wear safety glasses while in the lab. Having clear guidelines and practicing them on a consistent basis establish set rules and structure for the classroom that promote safety as a top priority.