IND115 Arc Flash Syllabus

Course Information

Credits 1
Campus Washburn Institute of Technology
Address 5724 SW Huntoon
City/State/Zip Topeka, Kansas 66604
Office Fax 785-273-7080

Description
This course will address real world challenges that electrical workers face on a daily basis. It will introduce avoiding oversights that could result in shock and arc-flash accidents. The material presented will emphasize the rules specified by the National Fire Protection Association (NFPA) using the NFPA 70E standards. The delivery method will include videos of real accidents due to arc flash in the manufacturing environment. It will cover first-time coverage of direct current (DC) shock protection boundaries, hazard and risk categories for specific electrical tasks such as full-head protection against arc flash by eliminating the second task designation protocol stated by the NFPA. After taking this course, students will be able to take the arc flash certification test.

Textbooks

Student Learning Outcomes:
A. Communicate effectively
B. Integrate technology
C. Learn effectively
D. Demonstrate cooperative teamwork skills
E. Apply safety in the workplace
F. Think critically and creatively
G. Demonstrate responsible work ethics

Competencies
1. Explain the definition and duties of Qualified Workers.
2. Explain the NFPA strategies to facilitate worker safety.
3. Explain why electrical workers must recognize and avoid electrical hazards.
4. Explain common tasks considered to be Arc Flash hazards.
5. Explain when an Arc Flash hazard exists.
6. Explain and define the term Task Qualified.
7. Discuss how an electrically safe working condition is created.
8. Explain why all sources of electrical supply must be determined.
9. Discuss the steps in creating an electrically safe work condition.
10. Explain how to confirm a zero energy state with a voltmeter.
11. Explain when equipment must be considered energized.
12. Explain and discuss when Arc Flash protection may be removed.
13. Discuss why energized work is permitted on life support systems.
14. Explain the voltage level in which energized work is permitted.
15. Explain the exceptions to the electrical work permit requirement.
16. Explain what an Arc Flash Boundary is.
17. Explain the requirements of each of the three Approach Boundaries.
18. Explain when Unqualified Persons may cross the Limited Approach Boundary.
19. Explain and discuss the methods for determining the Arc Flash Boundary.
20. Explain what elements affect the Incident Energy Level.
21. Explain what Arc-rated clothing is.
22. Discuss Arc Flash protection required by the 5 Hazard Risk Categories.

Guidelines for Success

Assessment Plan
Assessment is an integral part of the educational process at Washburn Tech and accurate feedback is an important tool in continuously improving the institution’s technical programs. Students can expect to participate in assessment activities prior to entry into programs, within specific courses and following program completion for specific fields of study.

Grading Rationale and Grading Scale
Student progress is evaluated by means that include, but not limited to: Exams (60%), written assignments/labs (30%), and attendance/class participation (10%).

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<thead>
<tr>
<th>Percentage Range</th>
<th>Grade</th>
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<tbody>
<tr>
<td>92% - 100%</td>
<td>A</td>
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<tr>
<td>84% - 91%</td>
<td>B</td>
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<td>76% - 83%</td>
<td>C</td>
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<tr>
<td>68% - 75%</td>
<td>D</td>
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<td>0% - 67%</td>
<td>F</td>
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Attendance
Classroom attendance is required. Material missed must be made up with instructor.
Disability
The Special Support Services (SSS) Office is responsible for assisting in arranging accommodations and for identifying resources at Washburn Institute of Technology for persons with disabilities. Qualified students with disabilities MUST register and provide documentation with the office to be eligible for services. New requests for accommodations should be submitted two months or more prior to the date services should begin; however, contact the SSS Office as soon as a need may arise. Depending on the accommodation request, four to eight week lead time may be needed for timely and effective provision of services. SSS coordinates and assist in arranging services it deems appropriate of eligible students on a case-by-case basis.

If you are a student with a disability that may substantially limit your ability to participate in this class and believe you will need accommodations, it is your responsibility to contact:

Special Support Services Coordinator
Phone: 785-228-6356
E-Mail: ssscoordinator@washburn.edu