

# **CEU COURSE DESCRIPTION**

## **BASIC ELECTRICITY CEU TRAINING COURSE**

Review of energy and electrical systems and related electrical/math fundamentals.

This course will also cover Single and Three Phase Power, transformers and general electrical principles.

- How electrical charge relates to voltage, current, and resistance.
- What voltage, current, and resistance are.
- What Ohm's Law is and how to use it to understand electricity.

You will not need any other materials for this course.

### **Target Audience**

The primary target audience for this course includes electricians, instrument technicians or maintenance technicians but is not limited to include water distribution workers, well drillers, pump installers, water treatment operators, wastewater operators and onsite/installers.

Also included are people interested in working in a water treatment/wastewater treatment or distribution facility and/or wishing to maintain CEUs for a certification license or to learn how to perform their job safely and effectively, and/or to meet education needs for promotion. There are no prerequisites, and no other materials are needed for this course.

### **Course Statement of Need**

Most areas of operations will have a need for an electrician, instrument technician or maintenance technician to work on electrical components, systems, motors, telemetering, phase controls and/or electrical panels. This course was designed to provide these professionals a related CEU course for renewal requirements.

### **CEU Course Learning Objectives and Timed Outcomes**

Knowledge obtained by this CEU Course and the approximately average times the student will spend on each subject. This includes assignment reading, glossary review, pre-examination and final examination.

### **CEU Course Principle Goals**

1. Energy and the foundation of modern electricity.
2. Magnets, electromagnetism and electricity production.
3. Electrical theory and various principles.
4. Single and three phase power systems, sources, connections and transformers.
5. Electronic components and principles.
6. Electric motors and operating principles.

### **CEU Course Primary Learning Objectives**

1. The student will be able to understand and describe energy and the foundation of modern electricity.
2. The student will be able to understand and describe magnets, electromagnetism and electricity production.
3. The student will be able to understand and describe the electrical theory and various principles.
4. The student will be able to understand and describe the single and three phase power systems, sources, connections and transformers.

5. The student will be able to understand and describe various commonly found electronic components and principles.
6. The student will be able to understand and describe various commonly found electric motors and operating principles.

### **CEU Course Detailed Learning Objectives and Timed Outcomes**

1. The student will be able to understand and describe energy and the foundation of modern electricity. 30 Minutes
  - a. Basic Electrical Terms
  - b. Electrical Equations
  - c. Electrical Generator Operation
  - d. Electrical Principles
  - e. Electrical Transmission
  - f. How Electricity is Generated
  - g. Joules
  - h. Static and Current Electricity
  - i. The Wonder of Electricity
  - j. Water & Electrical Principles
  
2. The student will be able to understand and describe magnets, electromagnetism and electricity production. 150 Minutes
  - a. Battery Power Principles
  - b. Electric Charge
  - c. Electromagnetism
  - d. Describe a sine wave and explain how it is generated.
  - e. Describe how a transformer makes AC power transmission and distribution possible.
  - f. Calculate secondary voltage in a transformer.
  
3. The student will be able to understand and describe the electrical theory and various principles. 350 Minutes
  - a. AC Power Generation
  - b. Faraday's Law
  - c. Kirchoff's Contribution
  - d. Maxwell-Faraday Equation
  - e. Ohm's Experiment
  - f. Power, Resistance, Current
  - g. Understanding AC verses DC
  - h. Understanding Resistance
  - i. Understanding Voltage
  - j. Explain static and current electricity as the movement of electrons.
  - k. Calculate voltage, current and resistance in a DC circuit, using Ohm's Law.
  - l. Calculate power in watts, using the Power Law.
  - m. Convert watts to horsepower.
  - n. Size conductors properly.
  
4. The student will be able to understand and describe the single and three phase power systems, sources, connections and transformers. 135 Minutes
  - a. Sine Wave
  - b. Single Phase from 3 Phase
  - c. The Edison System

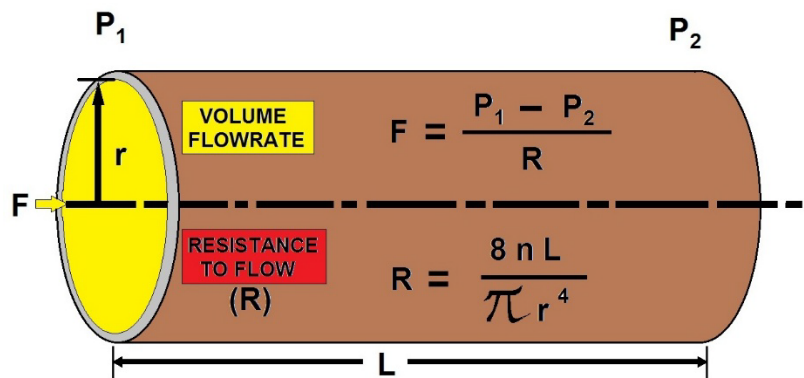
- d. Three Phase Transformers
- e. Transformers
- f. Understanding Single Phase
- g. Understanding Three Phase
- h. Describe an Edison three-wire system and explain why it is used.
- i. Explain the difference between neutral conductors and grounding wire.

5. The student will be able to understand and describe various commonly found electronic components and principles. 30 Minutes

- a. Circuit Interrupters
- b. Circuit Protection
- c. Circuits, Coils and Capacitors
- d. Connecting Loads
- e. Identifying and Connecting Leads
- f. Impedance and Resistance
- g. Parallel Circuits
- h. Phasors
- i. Power Factors
- j. Resistance in Parallel Circuits
- h. Calculate voltage drops in series circuits.
- i. Calculate branch currents and total current in parallel circuits.
- j. Determine the equivalent resistance of combination circuits.
- k. Describe the relationship between current, voltage, and impedance in circuits containing capacitors and inductors.
- l. Explain why current times voltage does not equal power in capacitive or inductive circuits.
- m. How electrical charge relates to voltage, current, and resistance.
- n. What voltage, current, and resistance are.
- o. What Ohm's Law is and how to use it to understand electricity

6. The student will be able to understand and describe various commonly found electric motors and operating principles. 20 Minutes

- a. AC Motors
- b. Linear Motor
- c. Motor Lubrication
- d. Motor Principles Review
- e. Rotary Motor
- f. Stepper Motor
- g. Synchronous Motor
- h. Torque Motor



### HAGEN-POISEULLE LAW

### **Specific Course Goals and Timed Outcomes (Beta Testing) Short Summary**

Fourteen students were tested and the average time necessary to complete each task was recorded stated in the above objectives and timed outcome section. In the above timed outcome section area, the tasks were measured using times spent on each specific objective goal and final assignment grading of 70% and higher. Twenty-five students were originally given a task assignment survey in which to track their times on the above learning objectives (course content) and utilized a Scantron answer sheet to complete their final assignment. All students were given 30 days to complete this assignment and survey. Only fourteen were successful and passed the final assignment with the highest passing score of 98 and the lowest of 71 percent with 11 students failing by not completing or scoring less than 70 percent.

### **Beta Testing Group Statistics**

Twenty-five students were selected for this assignment. All the students held electrical positions primarily in water or wastewater operator positions. None of the test group received credit for their assignment. Four students did not complete the reading assignment for one reason or another, seven other failed the assignment. The average times were based upon the outcome of fourteen students. All students utilized a Scantron style answer key to complete their assignment. Average high score was 93, with the average passing score of 84 percent. Rusty Randall Proctor, April 2012

### **Accreditation Formula for Figuring CEU Credit\*\***

The results of beta testing were used in conjunction with a formula to determine average student time for accreditation purposes for intended audiences.

1 page of text = 2 minutes of student time.

1 word practice problem = 1 minute of student time.

1 word quiz/exam question = 1 minute of student time.

Written essay question = 24 minutes of student time. This time is based upon three paragraphs utilizing clarity, conciseness, coherence, and correctness.

Math question = Each conversion is equal to 3 minutes. Questions requiring multiple conversions are granted an average of 3 more minutes per conversion.

\*\*CEU was awarded based on guidelines established by the International Association of Continuing Education and Training (IACET).

225 pages times 2 equals 450 divided by 60 minutes = 7.50 hours

20 Algebra Equations = 1 hour

300 questions equals 5.00 hours

**Total time 13.5 hours *We are asking for 13hours of credit.***

## **Task Analysis and Training Needs Assessment Process Information Gathering**

Task Analysis and Training Needs Assessments have been conducted to determine or set Needs-To-Know for the basis of TLC's continuing education courses. The following is a listing of some of those who have conducted extensive valid studies from which TLC has based the continuing education program upon: the Environmental Protection Agency (EPA), the Arizona Department of Environmental Quality (ADEQ), the Texas Commission of Environmental Quality (TCEQ), Pennsylvania Department of Environmental Protection (PDEP) and the Association of Boards of Certification (ABC).

The titles or names of subjects (Learning Objectives) may be changed for readability purposes. Some of the terms used in this document may be part of a copyrighted adult learning assessment process and in these cases, we utilize generic terminology. The needs assessment/survey maintains our training and education materials criteria. Assessments and changes are performed based on changes in technology, evaluations of the students, regulatory changes and editorial corrections. Most of this information is considered intellectual property and may not be owned by TLC but by third parties.

### **ADDIE**

TLC utilizes a five-phase instructional design model consisting of Analysis, Design, Development, Implementation, and Evaluation for our continuing education courses. Each course design step has an outcome that feeds into the next step in the sequence. The five phases of ADDIE are as follows:

#### **ANALYSIS**

During the Training Needs Assessment Process Information Gathering Analysis phase, the course designer(s) (see Subject Matter Experts and Contributing Editors) identifies the learning need, the goals and objectives, the student's needs, existing knowledge, Course Statement of Need, and any other relevant characteristics (State or Federal Need-to-Know) and to ensure that students are learning what is relevant for their job.

#### **DESIGN**

This is the systematic process of specifying learning objectives from the Training Needs with a focus on Bloom's Taxonomy. A detailed storyboard following the Needs Assessment/Survey and/or Course Statement of Need will determine the course content.

#### **DEVELOPMENT**

The actual creation (production) of the training content will begin based upon the Design phase using Bloom's Taxonomy. Currently, a decision is made to proceed or table the course.

#### **IMPLEMENTATION**

During implementation, the Alpha testing plan is put into action and a procedure for course and/or assessment revision is implemented. These course materials and assessments are delivered or distributed to the student group. After delivery, the effectiveness of the training materials is evaluated in Beta testing phase. All of our courses have extensive Alpha and Beta testing to ensure job relevancy, correct information and course learning objectives are met.

## **EVALUATION**

This phase consists of (1) formative and (2) summative evaluation from Alpha and Beta testing. Formative evaluation is present in each stage of the ADDIE process. Summative evaluation consists of tests designed for criterion-related referenced items and providing opportunities for feedback from the students and proctor.

Administrative and instructional staff will collect all student concerns (verbal, written and surveys) and distribute these to TLC Administrative personnel for evaluation and course corrections. Course and/or Assessment revisions are made as necessary.

### **Precept-Based (Micro-Learning) Training Course**

TLC's training courses are based upon a form of induction training, made of topical and technical precepts that are discovered in the Needs Assessment/Survey and/or Training Needs Assessment Process Information Gathering.

The training topics or learning objectives are made up of "micro-content" or "precepts"— or small chunks of information that can be easily digested. These bite-size pieces of technical information are one of the most effective ways of teaching students new or important information (regulatory or technical) because it helps the mind retain knowledge easier.

Micro-learning or precept-based training doesn't rely on the student to process a large amount of information before breaking it down. Our method includes short modules with clearly defined learning goals for each section. This method allows a student to hone in on a particular skill, then given the opportunity to exhibit their knowledge in the final assessment (assignment).

### **Course Training/Assessment Needs Methodology**

Technical Learning College identified training/assessment needs by placing identifying them in two categories: internal and external.

#### **Internal Methods include:**

- ✓ Observation
- ✓ Interviews
- ✓ Instruments: Perception instruments and Knowledge based assessments
- ✓ Student records and reports
- ✓ Group problem analysis (Classroom or Seminars)
- ✓ Performance or Survey appraisals

#### **External Methods include:**

- ✓ Outside consultants (Completion)
- ✓ Government Certification Reviews (Training Needs)
- ✓ Records and reports from other agencies

The needs assessment/survey maintains our training and education materials criteria. Assessments and course material changes are performed based on changes in technology, evaluations of the participants and regulatory changes. Materials are assessed yearly or as needed to ensure course integrity.

## **Course Procedures for Registration and Support**

All of Technical Learning College's distance learning courses have complete registration and support services offered. Delivery of services will include e-mail, web site, telephone, fax and mail support. TLC will attempt immediate and prompt service.

When a student registers for a correspondence course/online course, he/she is assigned a start date and an end date. It is the student's responsibility to note dates for assignments and keep up with the course work. If a student falls behind, he/she must contact TLC and request an end date extension in order to complete the course. It is the prerogative of TLC to decide whether to grant the request. All students will be tracked by a unique computer-generated number assigned to the student. Some students will be tracked and reported by their operator ID for any required state agency.

### **Disclaimer and Security Notice**

Students should understand that it is their responsibility to ensure that this CEU course is either approved or accepted in my State for CEU credit. Students shall understand and follow State laws and rules concerning distance learning courses and understand these rules change on a frequent basis and will not hold Technical Learning College responsible for any changes. Students should understand that this type of study program deals with dangerous conditions and will not hold Technical Learning College, Technical Learning Consultants, Inc. (TLC) liable for any errors or omissions or advice contained in this CEU education training course or for any violation or injury caused by this CEU training course material.

### **Student's Identity, Attendance, and Participation Verification**

A proctoring report and/or computer-tracking program validates proper identity, attendance and participation. The student shall submit a driver's license for signature verification and track their time worked on the assignment. The student shall also sign an affidavit verifying they have not cheated and worked alone on the assignment. We follow up with telephone confirmation and/or quiz review assessment. All student attendance is tracked on TLC's student attendance database.

### **Teaching Techniques and Assessment Tools**

Our training courses are based upon a form of induction training, made of topical and technical precepts. The training topics are made up of "micro-content" or "precepts"– or small chunks of information that can be easily digested. These bite-size pieces of technical information are one of the most effective ways of teaching people new information because it helps the mind retain knowledge easier. Micro-learning or precept-based training doesn't rely on the student to process a large amount of information before breaking it down. Our method includes short modules with clearly defined learning goals for each section with a post quiz and a final assessment (quiz). This method of pre-quiz allows a student to hone in on a particular skill, then given the opportunity to exhibit their knowledge in the final assessment.

### **Educational Learning Objective Topics**

The CEU course covers several educational topics/functions/purposes/objectives. The topics listed are to assist in determining which educational objective or goal is covered for a specific topic area. This information is available in the detailed beta-testing information and may be found in the course's table of contents. The titles or names of subjects may be changed for readability purposes.

### **TLC Contact Information**

All instructors and administrative staff are obligated to respond within 1 day by email, snail mail or telephone providing proper guidance to successfully complete the assignment. Email and telephone inquiries are handled quickly, generally within 2 hours of the call. We encourage students to complete their work with less frustration and fewer delays by calling or e-mailing us for any concern. We attempt to provide direct interaction similar to conventional classroom training.

### **Security and Integrity**

All students are required to do their own work. All lesson sheets and final exams are not returned to the student to discourage sharing of answers. Any fraud or deceit and the student will forfeit all fees and the appropriate agency will be notified. A random test generator will be implemented to protect the integrity of the assignment.

### **Student Information Personal Data Security Procedures**

All information regarding the student is strict and privileged only. This information is held in secure databases and is not sold or provided to any one unless the student requests a copy or a State agency does an audit. Even during audits, we restrict confidential information unless the Agency can provide a legitimate excuse. Some of this security information and data is priority and details are not provided. Students are not provided with any passwords at this time.

### **Grading Criteria / Certificate of Completion**

TLC will offer the student either pass/fail or a standard letter grading assignment. If TLC is not notified, the student will only receive a pass/fail notice. In order to pass your final assignment, you are required to obtain a minimum score of 70% on your assignment.

The certificate of completion will have all text in capital letters and there is a water mark of the Technical Learning College in three colors along with anti-counterfeiting security measures on the edge of the certificate. An electronic copy is assigned to the student's electronic record with issue date.

The grading scale is administered equally to all students in the course. Do not expect to receive a grade higher than that merited by your total points. No point adjustments will be made for class participation or other subjective factors. For security purposes, please fax or e-mail a copy of your driver's license and always call us to confirm we've received your assignment and to confirm your identity.

### **Student Assistance**

The student shall contact TLC if they need help or assistance and double-check to ensure the registration page and assignment has been received and graded.

### **Instructions for Written Assignments**

This CEU course uses multiple choice and true/false questions. Answers may be written in this manual or typed out on a separate answer sheet. TLC prefers that students type out and e-mail their answer sheets to [info@tlch2o.com](mailto:info@tlch2o.com), but they may be faxed to (928) 468-0675.

### **Final Examination for Credit**

Opportunity to pass the final comprehensive examination is limited to three attempts per course enrollment.

### **Environmental Terms, Abbreviations, and Acronyms**

TLC provides a glossary in the rear of this manual that defines, in non-technical language, commonly used environmental terms appearing in publications and materials, as well as abbreviations and acronyms used throughout the EPA and other governmental agencies.

### **Feedback Mechanism (Examination Procedures)**

Each student will receive a feedback or survey form as part of his or her study packet. The student will be able to find this form in the front of the assignment or lesson(assessment). The student can e-mail, snail mail or telephone TLC for any concern at any time.

### **Student Concerns**

Most of student/training course related concerns are generally answered within 2 hours but not more than 24 hours. TLC has three support staff administrators with computers and telephones and have excellent communication and computer skills and able to respond and track all students and obtain or submit required forms and assignments. TLC has a dedicated computer student tracking system database that is backed up on a daily basis, and this information is secured and stored at a secure offsite location in case of fire or security problems. All student website information is tracked and documented for security measures.

### **Recordkeeping and Reporting Practices**

TLC keeps all student records for a minimum of five years. It is the student's responsibility to give the completion certificate and/or paperwork to the appropriate government agencies. If necessary, we will electronically submit the required information to any required state agency for your certification renewals.

### **TLC Record Storage**

TLC's training records include the following elements:

1. Individual course training (assessment) and registration page (Customer Order Record) is recorded in Excel format, and the hard copies are scanned and stored in a computer database for 5 years and include the following:
  - a. the instructor(s) who taught each session on that date the of the training session or grading was offered (in comments section registration page) as well as which instructor was considered to be the lead instructor(s) and by the Director.
  - b. the name of the instructor(s) and facilitator(s) who proctored and/or graded the examination for each training session if applicable (in comments section registration page).
  - c. the attendance sign-in sheet(s) (registration page) for each training course or session.
  - d. all graded and dated validated examination answer (Assessment) sheets for each examination attempt including an explanation (written in comments and/or Excel list) for any retests as well as a narrative explaining any assistance provided to the attendee before the re-test; and
  - e. session evaluation(survey)forms (in comments section registration page and or Excel list).

### **Final Assignment**

The final examination assignment is determined by the examination administrator or the instructor and there are generally three versions that are readily available. There are also three levels of the examination from average, (5 Answers) Difficult (5 +All of the above) and very difficult (Six answers and All of the above). The student is provided the average rated examination unless there is a condition or concern that requires a more difficult examination. Example, two or more students at the same address or any suspicion of cheating or potential fraud. We try to ensure the security and learning experience. Assignments/answer keys are only accessible to instructors and administrative staff that have a need-to-know clearance.

### **Failure**

In order to successfully pass this course, you will need to have 70% on the final exam. If the student fails the examination, they are provided with two more chances to successfully pass the exam with a score of 70% or better. The student may receive a different and randomly generated exam. Upon failure of an exam, the student can submit their concerns in writing or submit a survey form and has the option to receive instructor assistance that would be equivalent to conventional classroom assistance in discovering the areas that are deficient. The instructor has the option in describing the assistance method or procedure depending upon the student's deficiencies.

### **Grading Criteria**

TLC will offer the student either pass/fail or a standard letter grading assignment.

- A 900 – 1000 points
- B 800 – 899 points
- C 700 – 799 points
- D 600 – 699 points
- F <600 points

### **Forfeiture of Certificate (Cheating)**

If a student is found to have cheated on an examination, the penalty may include--but is not limited to--expulsion; foreclosure from future classes for a specified period; forfeiture of certificate for course/courses enrolled in at TLC; or all of the above in accordance with TLC's Student Manual. A letter notifying the student's sponsoring organization (State Agency) of the individual's misconduct will be sent by the appropriate official at TLC. No refund will be given for paid courses.

An investigation of all other students that have taken the same assignment within 60-day period of the discovery will be re-examined for fraud or cheating. TLC reserves the right to revoke any published certificates and/or grades if cheating has been discovered for any reason and at any time. Students shall sign affidavit agreeing with all security measures.

The student shall submit a driver's license for signature verification and track their time worked on the assignment. The student shall sign an affidavit verifying they have not cheated and worked alone on the assignment.

**Disclaimer Notice**

It is ultimately the student's responsibility to ensure that this CEU course is either approved or accepted in my State for CEU credit. The student shall understand State laws and rules change on a frequent basis and believe this course is currently accepted in their State for CEU or contact hour credit, if it is not, the student shall not hold Technical Learning College responsible. The student shall also understand that this type of study program deals with dangerous conditions and that the student shall not hold Technical Learning College, Technical Learning Consultants, Inc. (TLC) liable for any errors or omissions or advice contained in this CEU education training course or for any violation or injury caused by this CEU education training course material. The student shall call or contact TLC if help or assistance is needed and double-check to ensure the registration page and assignment has been received and graded.

**Affidavit of Exam Completion**

The student shall affirm that they alone completed the entire text of the course. The student shall affirm that they completed the exam without assistance from any outside source. The student shall understand that it is their sole responsibility to file or maintain their certificate of completion as required by the state.

**Refund Policy**

We will beat any other training competitor's price for the same CEU material or classroom training. Student satisfaction is guaranteed. We will refund course fees if the course is not accepted for credit by the State. Otherwise, any other problem will be given an exchange credit towards an acceptable or approved course for the State. Once we are notified of the refund or exchange, we will generally issue a refund in 30 days of the problem and exchange within the same day.

**ADA Compliance**

TLC will make reasonable accommodations for persons with documented disabilities. Students should notify TLC and their instructors of any special needs. Course content may vary from this outline to meet the needs of these particular students.

**Ongoing Course Evaluation**

Administrative and instructional staff will collect all student concerns (verbal, written and surveys) and distribute these to Jeff Durbin and Bubba Jenkins for evaluation and course corrections.

## **NOTE TO STUDENTS**

**Keep a copy of everything that you submit!** If your work is lost, you can submit your copy for grading. If you do not receive your certificate of completion or other results within two to three weeks after submitting it, please contact your instructor.

**The student is required to submit the following information for assignment grading...**

1. 70 PERCENT ON FINAL ASSESSMENT
2. DRIVER'S LICENSE
3. SCHEDULE OF TIME WORKED ON ASSIGNMENT
4. AFFIDAVIT OF EXAM COMPLETION
5. PROCTOR CERTIFICATION
6. TELEPHONE CONFIRMATION

### **Educational Mission**

*To provide TLC students with comprehensive and ongoing training in the theory and skills needed for the environmental education field,*

*To provide TLC students with opportunities to apply and understand the theory and skills needed for operator certification,*

*To provide opportunities for TLC students to learn and practice environmental educational skills with members of the community for the purpose of sharing diverse perspectives and experience,*

*To provide a forum in which students can exchange experiences and ideas related to environmental education,*

*To provide a forum for the collection and dissemination of current information related to environmental education, and to maintain an environment that nurtures academic and personal growth.*

# AFFIDAVIT

## State Requirements- Each State has 1 or more of these requirements.

### Photo Identification

We will require a photocopy of your driver's license or official government ID to verify your identity. You can upload a copy of your driver's license or other official ID to this computer program or submit a photocopy with your assignment. You can take a photo of your ID with your cell phone and upload the photo. No certificate of completion or reporting to the State will be issued until we receive your identification.

### Proctoring Report

If your State requires a proctoring report, we have a copy on this site for you to download and provide to your proctor. If you are unsure if you need a proctoring report, contact your State Agency or email us. [Info@tlch2o.com](mailto:Info@tlch2o.com) You can also upload the report to us in this computer program.

### Security and Disclaimer Affidavit

*You must agree to the terms below before moving forward.*

I understand that I am 100 percent responsible to ensure that this course is approved and/or accepted for credit by my State Agency. I understand that TLC has a zero tolerance towards not following their rules, cheating or hostility towards staff or instructors. I need to complete the entire assignment for credit. There is no credit for partial assignment completion. I will provide an official government ID card to verify my identity.

Some States require your computer camera to be on during the training program to ensure that you alone are competing the work.

If necessary, by my State agency, my exam was proctored. I will contact TLC if I do not hear back from them within 2 days of final exam submission. I will forfeit my purchase costs and will not receive credit or a refund if I do not abide with TLC's rules. I will not hold them liable for any misinformation or any injury. I will allow TLC to email and/or call me.

You can take breaks between the text reading assignments and quizzes.

You can take notes.

You will need to pass the quizzes with 100% and the final exam with 70%.

There is a customer survey at the end of the program.

**By clicking the next button, you will agree to these terms.**

## PROCTORING INSTRUCTIONS

Students enrolled in Technical Learning College's CEU courses that require proctored testing and **who do not live in the physical service area** of the Technical Learning College Test Center must nominate and gain prior approval of a proctor who will monitor course tests. A new proctor nomination form is required for each term and for each class.

### Nominating a Proctor

**Students are responsible** for identifying, nominating, and making all of the arrangements for the proctoring of their course tests, including the payment of any fees for services and the return of test materials to Technical Learning College Test Center (cost of FAX or postage). The proctor must be able to receive the student's test(s) via email as attachments. If the student is unable to find a suitable proctor, they must contact the Technical Learning College Test Center for assistance immediately via email.

### PROCTORS, *If Necessary...*

A proctor is an individual who agrees to receive and administer a student's test(s) from Technical Learning College at the proctor's business email address. The test(s) will be ethically and professionally administered in a suitable testing environment (e.g., college/library or professional office). The proctor will return the test(s) to the Technical Learning College Test Center via fax immediately after administration, and the proctor will mail the exam within one (1) workday of administration to the Technical Learning College Test Center.

Proctors certify in writing to the Technical Learning College Test Center that the student completed the test according to all of the specific directions provided in the proctor guidelines letter. As the Proctor Nomination Form indicates, the student will identify the specific test(s) the proctor will monitor.

### Proctor Nomination Form

Students will use the Proctor Nomination Form for nomination and approval of a proctor. The student will complete the top part of the form for each course s/he is taking, even if the same proctor is used for all tests. The student must click on the submit button for the data to be electronically transmitted to the Technical Learning College Test Center.

Any proctor the student nominates must be acting in the official capacity in one of the following positions:

- **College or University Personnel:** Dean, Department Chair, Student Records, Professional Staff Member of an adult/continuing education office or counseling center, Librarian, Professor, or any official testing center personnel if the tests are administered in the center.
- **Armed Forces Education Office Personnel**
- **Public or Private School Personnel:** Superintendent, Principal, Guidance Counselor, or Librarian.
- **Other:** Civil Service Examiner, Librarian for City/County, HR Professional, or Education/Training Coordinator.

**The following persons do not qualify as proctors:**

- **Co-workers, someone who reports to you or your immediate supervisor**
- **Friends**
- **Neighbors**
- **Relatives**

# CERTIFICATION OF COURSE PROCTOR

Technical Learning College requires that our students who takes a correspondence or home study program course must pass a proctored course reading, quiz and final examination. The proctor must complete and provide to the school a certification form approved by the commission for each examination administered by the proctor.

## Overview

Technical Learning College is committed to maintaining the integrity and quality of its educational programs. To ensure that students enrolled in correspondence or home study courses meet the necessary academic standards, the College requires all such students to complete their course reading, quizzes, and final examinations under the supervision of an approved proctor.

## Proctored Assessment Requirements

- All students participating in correspondence or home study programs must complete a proctored course reading, quiz, and final examination.
- Each examination must be administered by a qualified proctor who meets the standards set by the College and the commission.

## Proctor Certification Form

- For every examination administered, the proctor is required to complete a certification form.
- This certification form must be approved by the commission to ensure compliance with state and institutional requirements.
- The completed certification form must be provided to Technical Learning College for each examination.

## Responsibilities of the Proctor

1. Supervise the student throughout the examination process to ensure academic honesty and integrity.
2. Verify the identity of the student before administering any assessment.
3. Complete the approved certification form immediately after each exam session.
4. Submit the certification form to Technical Learning College as instructed by the College administration.

## Student Responsibilities

1. Arrange for a qualified proctor to oversee all required assessments.
2. Comply with all examination procedures and instructions provided by the proctor and the College.
3. Ensure that all proctor certification forms are properly submitted to the College for recordkeeping and verification.

## Conclusion

Adhering to these proctored assessment requirements helps maintain the credibility and recognition of Technical Learning College's correspondence and home study programs. Failure to comply with these policies may result in delays in course completion or denial of course credit.

**Instructions.** When a student completes the course work, fill out the blanks in this section and provide the form to the proctor with the examination.

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

Name of Licensee: \_\_\_\_\_

**Instructions to Proctor.** After an examination is administered, complete and return this certification and examination to the school in a sealed exam packet or in pdf format.

I certify that:

1. I am a disinterested third party in the administration of this examination. I am not related by blood, marriage or any other relationship to the licensee which would influence me from properly administering the examination.
2. The licensee showed me positive photo identification prior to completing the examination.
3. The enclosed examination was administered under my supervision on \_\_\_\_\_. The licensee received no assistance and had no access to books, notes or reference material.
4. I have not permitted the examination to be compromised, copied, or recorded in any way or by any method.
5. Provide an estimate of the amount of time the student took to complete the assignment.

Time to complete the entire course and final exam. \_\_\_\_\_

Notation of any problem or concerns:

Name and Telephone of Proctor (please print):

\_\_\_\_\_

Signature of Proctor

## **CUSTOMER SERVICE RESPONSE CARD**

NAME: \_\_\_\_\_

E-MAIL \_\_\_\_\_ PHONE \_\_\_\_\_

PLEASE COMPLETE THIS FORM BY CIRCLING THE NUMBER OF THE APPROPRIATE ANSWER IN THE AREA BELOW.

1. Please rate the difficulty of your course.

Very Easy    0    1    2    3    4    5    Very Difficult

2. Please rate the difficulty of the testing process.

Very Easy    0    1    2    3    4    5    Very Difficult

3. Please rate the subject matter on the exam to your actual field or work.

Very Similar    0    1    2    3    4    5    Very Different

4. How did you hear about this Course? \_\_\_\_\_

5. What would you do to improve the Course?

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How about the price of the course?

Poor \_\_\_\_ Fair \_\_\_\_ Average \_\_\_\_ Good \_\_\_\_ Great \_\_\_\_

How was your customer service?

Poor \_\_\_\_ Fair \_\_\_\_ Average \_\_\_\_ Good \_\_\_\_ Great \_\_\_\_

Any other concerns or comments.

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**Melissa Durbin, Author and Dean of Instruction.**

30 years' experience in water disinfection training along with 18 years of college instruction. I have taught this course to hundreds of students and still learn more each day about microorganisms. Call me or any of the other Instructors for course assistance. I welcome your input and comments and hope you enjoy this course.

**COURSE DESIGNERS AND CONTRIBUTORS**

Expert Team Behind Water and Wastewater Treatment Course Development

**Melissa Durbin**

Melissa Durbin is a co-author and co-designer of this course. With over 25 years of experience as a college instructor in water and wastewater treatment, Melissa brings a wealth of knowledge and dedication to professional education. Since 2001, she has written several nationally accepted water and wastewater treatment manuals, significantly contributing to the field's body of knowledge. Over her esteemed career, Melissa has taught approximately 10,000 students in subjects including water/wastewater treatment, disinfection, and related areas. She remains available to answer any questions related to this course and continues to foster the next generation of water quality professionals.

**Jeff Durbin**

Jeff Durbin co-designed this course and offers over 20 years of water and wastewater treatment experience, including more than 10 years as a backflow inspector for the City of Phoenix. Jeff has educated roughly 10,000 students, focusing primarily on pollution control and water quality aspects of treatment. His extensive hands-on and teaching experience ensures that students benefit from practical insights and current industry practices. Jeff is also available to address any queries concerning this course.

## **Chris Durbin**

Chris Durbin is noted as one of the three primary instructors, subject matter experts, and technical writers for this course. Alongside Melissa and Jeff Durbin, Chris is a professional trainer with education in contemporary trends in professional and continuing education. Collectively, the team brings a comprehensive, research-driven approach to course design and instruction.

### **Expertise and Experience**

Over the past ten years, Chris has developed and delivered comprehensive training programs focused on water treatment systems, distribution, and environmental related safety. His expertise extends to hands-on facility maintenance, demonstrated during his tenure at Prescott Pines Camp. There, he gained valuable experience working with groundwater systems and wastewater treatment processes, further enhancing his practical knowledge in the field.

### **Professional Strengths**

- Subject matter expert in water treatment and distribution systems
- Experienced in environmental course design and instruction
- Skilled in facility maintenance, groundwater, distribution and wastewater treatment
- Strong educational background in environmental studies and business management

### **Summary**

With a unique blend of instructional expertise, hands-on facility experience, and a solid educational foundation, Chris Durbin continues to provide high-quality education and training in the environmental sector. His commitment to excellence ensures that students are well-prepared to meet the challenges of water / wastewater management and environmental safety.

### **Extensive Academic Research and Industry Collaboration**

The development of Technical Learning College's (TLC's) continuing education course material is rooted in a multifaceted approach. The team leveraged field experience in the water quality sector, conducted extensive academic research through community college teaching, and incorporated insights from subject matter experts, including state officials and industry leaders. Their methodology included data analysis, task analysis, and training needs assessments, drawing on information from multiple states to ensure the curriculum meets diverse professional requirements.

### **Course Compiler: Peter Easterner**

Peter Easterner serves as the course compiler, bringing 20 years of expertise as a technical writer, editor, and desktop publisher. His background includes editing and authoring feasibility and trade-off studies, test procedures, specifications, user manuals, company policies, HR forms, and ISO-9000 documents. Renowned for exceptional grammatical and written communication skills, Peter is the "go-to" person for Microsoft Word, Outlook, and general computer queries. He also holds an Internet Webmaster Certificate covering HTML, further enhancing the quality and accessibility of course materials.

## Contributing Editors

**James L. Six** Received a Bachelor of Science Degree in Civil Engineering from the University of Akron in June of 1976, Registered Professional Engineer in the State of Ohio, Number 45031 (Retired), Class IV Water Supply Operator issued by Ohio EPA, Number WS4-1012914-08, Class II Wastewater Collection System Operator issued by Ohio EPA, Number WC2-1012914-94

**Joseph Camerata** has a BS in Management with honors (magna cum laude). He retired as a Chemist in 2006 having worked in the field of chemical, environmental, and industrial hygiene sampling and analysis for 40 years. He has been a professional presenter at an EPA analytical conference at the Biosphere in Arizona and a presenter at an AWWA conference in Mesa, Arizona. He also taught safety classes at the Honeywell and City of Phoenix, and is a motivational/inspirational speaker nationally and internationally.

**James Bevan**, Water Quality Inspector S.M.E. Twenty years of experience in the environmental field dealing with all aspects of water regulations on the federal, state, and local levels. Experience in the water/wastewater industry includes operation of a wastewater facility, industrial pretreatment program compliance sampling, cross-connection control program management, storm water management, industrial and commercial facility inspections, writing inspection reports for industry, and technical reports per EPA permit requirements. Teacher and Proctor in Charge for Backflow Certification Testing at the ASETT Center in Tucson for the past 15 years and possess an Arizona Community College, Special Teaching Certificate in Environmental Studies. Extensive knowledge and experience in college course and assignment/assessment writing.

**Dr. Pete Greer** S.M.E., Retired biology instructor, chemistry and biological review.

**Jack White**, Environmental, Health, Safety expert, City of Phoenix. Art Credits

## Ongoing Course Evaluation

Administrative and instructional staff will collect all student concerns (verbal, written and surveys) and distribute these to the Course Editor or Copyeditors for evaluation and course corrections. Administrative and instructional staff will collect all student concerns (verbal, written and surveys) and distribute these to TLC Administrative personnel for evaluation and course corrections. Course and/or Assessment revisions are made as necessary.

## Editor's Discretion

The Course Editor may change the course assessment (assignment), course text, objective, artwork and topical order as necessary for security, corrective, printing, readability or typesetting purposes. The assessment may be rotated for security purposes, and the course material may be updated to reflect any regulatory updates and/or corrections. The overall course objective or topic guide may be in a different order than the course manual for the reason of typesetting, adult learning principles and copy-editing purposes. Course materials, charts and artwork amendments, adjustments, modifications may be performed to reflect regulatory/safety text/artwork updates, Bloom's taxonomy, adult learning principle changes, error adjustments and comprehension. These changes generally do not reflect major course material changes, but are minor in nature