

## **CEU COURSE DESCRIPTION**

### **SCADA 202 CEU TRAINING COURSE – 12 hours**

This CEU course is a review of various industrial controls i.e. SCADA, telemetry and security principles. This course is general in nature and not state specific. You will not need any other materials for this course. How to monitor water/wastewater equipment. How to adjust various water/wastewater equipment. How to protect SCADA systems and related assets. You will not need any other materials for this course.

#### **Education Provider Information**

Technical Learning College  
Contact Person Melissa, Jeff Durbin  
PO Box 3060  
Chino Valley, AZ 86323

Toll Free (866) 557-1746  
Fax (928) 468-0675

#### **Target Audience**

The primary target audience for this course includes SCADA operators, 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 a SCADA operator, 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.

#### **General Learning Goals**

1. Students will be able to understand, identify and explain the basics of a SCADA system.
2. Students will be able to understand, identify and explain some of the SCADA devices, HMI, DCS, and PLCs.
3. Students will be able to understand, identify and explain the industrial control system.
4. Students will be able to understand, identify and explain Industrial control system security Progress Development.
5. Students will be able to understand, identify and explain various Network Architecture styles.
6. Students will be able to understand, identify and explain advanced industrial control security and controls.

## Detailed Learning Objectives

### Topic 1- SCADA Introduction

**Topic 1 - Section Focus:** You will learn the basics of the SCADA (or supervisory control and data acquisition) system. The student will be able to understand and describe the purpose of SCADA and the basic operation of SCADA systems. There is a post quiz at the end of this section to review your comprehension and a final examination in the Assignment for your contact hours. 120 Minutes

**Topic 1 – Scope/Background:** Industrial organizations and companies in the public and private sectors to control and maintain efficiency, distribute data for smarter decisions, and communicate system issues to help mitigate downtime use SCADA systems.

- |   |                          |
|---|--------------------------|
| A. Community Infrastructures            | G. SCADA Benefits        |
| B. Human Machine Interface Introduction | H. SCADA Concepts        |
| C. Operational Philosophy               | I. SCADA Considerations  |
| D. PLC/RTV Programming                  | J. SCADA Explained       |
| E. Remote Terminal Unit                 | K. SCADA Security Issues |
| F. SCADA Architectures                  |                          |

### Topic 2- SCADA, HMI, DCS, and PLCs

**Topic 2 - Section Focus:** You will learn the various SCADA components and their purposes in this section, including Human Machine Interface (HMI), Distributed Control System (DCS) and Programmable Logic Controllers (PLCs). The student will be able to understand and describe the purposes of HMI, DCS, and PLCs. There is a post quiz at the end of this section to review your comprehension and a final examination in the Assignment for your contact hours. 110 Minutes

**Topic 2 – Scope/Background:** SCADA systems are used to control dispersed assets where centralized data acquisition is as important as control. These systems are used in distribution systems such as water distribution and wastewater collection systems, oil and gas pipelines, electrical utility transmission and distribution systems, and rail and other public transportation systems.

- |                                  |                                   |
|----------------------------------|-----------------------------------|
| A. Batch Manufacturing Processes | E. Industrial Sector              |
| B. Control Components            | F. Network Components             |
| C. Data Historian                | G. Programmable Logic Controllers |
| D. ICS Operation                 | H. SCADA Overview                 |

### Topic 3- ICS Characteristics

**Topic 3 - Section Focus:** You will learn the basics of the Industrial Control System (ICS) threat and vulnerabilities. At the end of this section, you the student will be able to understand and describe various components, technologies, threats and vulnerabilities related to ICSs and IT systems. There is a post quiz at the end of this section to review your comprehension and a final examination in the Assignment for your contact hours. 110 Minutes

**Topic 3 – Scope/Background:** In a typical IT system, data confidentiality and integrity are typically the primary concerns. For an ICS, human safety and fault tolerance to prevent loss of life or endangerment of public health or confidence, regulatory compliance, loss of equipment, loss of intellectual property, or lost or damaged products are the primary concerns. The personnel responsible for operating, securing, and maintaining ICSs must understand the link between safety and security.

- |                                      |  |
|--------------------------------------|--|
| A. Architecture Security Focus       | E. Platform Vulnerabilities              |
| B. ICS vs IT Systems                 | F. Policy and Procedures Vulnerabilities |
| C. Insecure and Rogue Connections    | G. Risk Factors                          |
| D. Platform Hardware Vulnerabilities | H. Software Vulnerabilities              |

- I. Sources of Incidents
- J. Table - Communication Vulnerabilities

- K. Table - Summary of ICS vs IT
- L. Unintentional Consequences

#### **Topic 4- ICS Security Progress Development Section**

**Topic 4 - Section Focus:** You will learn the basics securing an Industrial Control System (ICS) and security threats to the SCADA system. At the end of this section, you the student will be able to understand and describe various methods of protecting the ICS system from attacks. There is a post quiz at the end of this section to review your comprehension and a final examination in the Assignment for your contact hours. 80 Minutes

**Topic 4 – Scope/Background:** The importance of secure systems should be further emphasized as business reliance on interconnectivity increases. DoS attacks and malware (e.g., worms, viruses) have become all too common and have already affected ICSs. In addition, a cyber breach in some sectors can have significant physical impacts

- A. Development of Security Program
- B. Key Components for Business
- C. Mitigation Controls
- D. Potential Consequences
- E. Senior Management Buy-in
- F. Vulnerability Assessment

#### **Topic 5 – Network Architecture Section**

**Topic 5 - Section Focus:** You will learn the basics of the network design and security of the ICS program (Architecture). At the end of this section, you the student will be able to understand and describe the Network and Firewalls. There is a post quiz at the end of this section to review your comprehension and a final examination in the Assignment for your contact hours.130 minutes

**Topic 5 – Scope/Background:** In an ICS environment, firewalls are most often deployed between the ICS network and the corporate network. Properly configured, they can greatly restrict undesired access to and from control system host computers and controllers, thereby improving security.

- A. Firewall Policies
- B. Firewall Rules
- C. Firewalls and DMZ
- D. ICS Firewall Issues
- E. Mac Locking
- F. Multicast Traffic
- G. Network Address Translation
- H. Patch Management Server
- I. Separated Control Network
- J. Simple Mail Transfer Protocol
- K. Single Points of Failure

#### **Topic 6- ICS Security Controls**

**Topic 6 - Section Focus:** You will learn the basics of advanced ICS security control. At the end of this section, you the student will be able to understand and describe security controls are the management, operational, and technical controls (i.e., safeguards or countermeasures) prescribed for an informational system to protect the confidentiality, integrity, and availability of the system and its information. 170 Minutes

**Topic 6 – Scope/Background:** An effective cyber security strategy for an ICS should apply defense-in-depth, a technique of layering security mechanisms so that the impact of a failure in any one mechanism is minimized. Use of such a strategy is explored within the security control discussions and their applications to ICS that follow.

- A. Access Controls
- B. Audit and Accountability
- C. Biometric Authentications
- D. Certification, Accreditation, and Security Assessments
- E. Challenge/Response Authentications
- F. Configuration Management
- G. Contingency Planning
- H. Control Room
- I. Disaster Recovery Planning
- J. Encryption
- K. Intrusion Detection
- L. Malicious Code Detection
- M. Management Controls
- N. Media Protection
- O. Operational Control

- P. Password Authentications
- Q. Physical and Environmental Protections
- R. Physical Token Authentications
- S. Planning
- T. Recovering Actions
- U. Response Actions

- V. Risk Assessments
- W. Role Based Access
- X. Technical Controls
- Y. Virtual Local Area Network
- Z. Virtual Private Network

**Prerequisites:** None

### **Beta Testing Results**

Thirty-five students were tested and the average time necessary to complete each task was recorded as the stated in the above objectives and 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. Originally, fifty students were given a task assignment survey in which to track their times on the above learning objectives (course content) and utilized a true/false-multiple choice style answer sheet to complete their final assignment. All students were given 30 days to complete this assignment and survey. Rusty Randall, Proctors, November 2015, Powell House.

### **Beta Testing Group Statistics**

Fifty students were selected for this assignment. All the students held some type of operator certification. None of the test group received credit for their assignment. The average completion times were based upon the outcome of thirty-five students. Fifteen students did not complete or failed the course. The average educational age of this group was not recorded.

Our best professional judgment is that this assignment is very difficult course for the beginning (First two years of experience) to moderately difficult for the intermediate level of certified operator.

The average time to complete the assignment is 12.3 hours and the average score was 83 percent, highest score was 98 percent and the lowest score was 48 percent.

### **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. This formula may not work for unintended audiences.

1 page of text = 2 minutes of student time. Not including the Assignment page count)

1 word practice problem = 1 minute of student time.

200 pages times 2 equals 400 divided by 60 minutes = 6.60 hours

80 Quiz Questions = 1 hour

300 Assignment Questions equals 5.0 hours

**Total time 12 hours - We are asking for 12 hours 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).

TLC has primarily used Training Provider Manual for the Pennsylvania Water and Wastewater System Operator Training Program for course goal setting and learning objectives for all three training formats; conventional classroom, distance paper based and web based training.

## **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. At this time, 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. **Ongoing Course Evaluation:** 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 considered to be 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 insure course integrity.

## **Course Author**

### **Melissa Durbin**

This course was co-authored by Melissa Durbin; she has over 20 years of wastewater treatment teaching experience as a college instructor. Melissa has written the several nationally accepted wastewater treatment manuals since 2001. This course has been accepted in most States for continuing education credit. Melissa has taught approximately 10,000 students about wastewater treatment and related classes. She will be available to answer questions relating this course.

### **Extensive Academic Research**

Technical Learning College's (TLC's) continuing education course material development was based upon several factors; field experience working in the water quality field, extensive academic research (teaching in the community college system), advice from subject matter experts (State officials and industry leaders), data analysis, task analysis and training needs assessment process information gathered from other states.

Both Melissa and Jeff Durbin are the two primary Instructors, Subject Mater Experts and Technical Writers have trained and/or certified more than ten thousand students. These two Instructors teach on a daily basis in a classroom setting throughout Arizona and on-line to students nationwide. See below for more information.

### **Advice from Subject Matter Experts**

Both Melissa and Jeff Durbin are professional trainers and have been educated in current trends in professional education and continuing education needs.

### **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 Depart of Environmental Protection (PDEP) and the Association of Boards of Certification (ABC).

TLC has primary used Training Provider Manual for the Pennsylvania Water and Wastewater System Operator Training Program for course goal setting and learning objectives for all three training formats; conventional classroom, distance paper based and web based training.

### **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 I 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



## **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, 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 Pennsylvania, Texas and New York.

### **Disclaimer and Security Notice**

The student shall understand that it their responsibility to ensure that this CEU course is either approved or accepted in my State for CEU credit. The student 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. The student shall 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 education training course material. The student shall contact TLC if they need help or assistance and double-check to ensure my registration page and assignment has been received and graded.

### **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.

### **TLC's 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 considered to be 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.

### **TLC's Educational Learning Objective Topics**

The general course descriptions or topic titles may be different from the detailed description of the course's outline or learning objectives. These terms may be an alternative expression or a substitute but essentially having the same meaning. This is done for reading or for editing purposes. The detailed alpha and beta-testing data is not available in this document and is proprietary information belonging to a third party. The CEU course covers several educational

topics/functions/purposes/objectives of compliance. The general course description of topics may be different from the detailed description. These differences are cosmetic only. The topics listed are to assist in determining which educational objective or goal that is covered for a specific educational topic area. The general information is available in the detailed beta-testing information and may be found in the course's table of contents.

### **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.

### **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.

### **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.

### **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 Assistance**

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

### **Final Examination for Credit**

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

### **Instructions for Written Assignments**

The SCADA 202 CEU Training course uses a true/false- multiple choice answer key.

### **Required Texts**

The SCADA 202 CEU course CEU training course comes complete, no other materials are necessary.

### **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

### **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 bases 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 New York, Colorado, Texas, Indiana, Pennsylvania and any other required state 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).

### **Grading Criteria**

TLC offers students the option of either pass/fail or assignment of a standard letter grade. If a standard letter grade is not requested, a pass/fail notice will be issued. Final course grades are based on the total number of possible points. 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.

### **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**

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

In order to successfully pass this course, you will need to have 70% on the final exam. The entire assignment is available on TLC's Website in a Word document format for your convenience.

### **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.

**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 quiz results within two or three weeks after submitting it, please contact us immediately. We expect every student to produce his/her original and independent work.

Any student whose work indicates a violation of the Academic Misconduct Policy (cheating, plagiarism) can expect penalties as specified in the Student Handbook, which is available through Student Services; contact them at (928) 468-0665. A student who registers for a distance learning course is assigned a "start date" and an "end date." It is the student's responsibility to note due dates for assignments and to keep up with the course work. If a student falls behind, she/he must contact the instructor and request an extension of her/his *end date* in order to complete the course. It is the prerogative of the instructor to decide whether or not to grant the request.

Your assignments are due on time. Any assignment or mailed-in examination that is one to five days late will be marked down one letter grade. Any assignment or mailed-in examination that is turned in *later* than five days will not be accepted and will be recorded in my grade book as "non-participating" and you can be withdrawn from class. (See final grade options.)

**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.

**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) work day 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.

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

**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. The Technical Learning College Test Center does not accept Yahoo, AOL, G-mail, Hotmail, or etc. email addresses.

If the student is unable to find a suitable proctor, they must contact the Technical Learning College Test Center for assistance immediately via email.

**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.

**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 will 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 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 education training course material. The student shall will 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.

### **Continuing Education Units**

You will have 90 days from receipt of this manual to complete it in order to receive your Continuing Education Units (**CEUs**) or Professional Development Hours (**PDHs**). A score of 70% or better is necessary to pass this course. If you should need any assistance, please visit our Assistance Page on the website. Please e-mail all concerns and the final test to [info@tlch2o.com](mailto:info@tlch2o.com).

### **Mission Statement**

Our only product is educational service. Our goal is to provide you with the best possible education service possible. TLC will attempt to make your learning experience an enjoyable opportunity.

### **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 this particular group.

**Course Objective:** To provide one hours of continuing education in wastewater treatment regulations.

### **Educational Mission**

#### **The educational mission of TLC is:**

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

*To provide TLC students 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.*

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

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



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

30 years' experience in wastewater treatment/pretreatment along with 18 years of college instruction. Call me or any of the other Instructors for course assistance. I welcome your input and comments and hope you enjoy this course.



## **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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