Technical Learning College

Course Development Summary
Administrative Operations

Subject Matter Experts and Technical Writers
Qualifications and Experience


Melissa Durbin is shown in top photograph teaching wastewater treatment on-site, teaching operators everything from pumps to laboratory procedures. TLC will cover everything from pre-treatment to the final effluent quality. TLC provides professional learning environment utilizing the latest technology in precept-based bites. TLC is redefining high-tech education for the technical professional. Our training methods integrate technology along with personal service into a seamless environment of skill and technical based learning. Our precept-based training system benefits all levels of operators regardless of experience or prior education. TLC's training enables operators to better utilize their skills with emphasizing intellectual and creative talents.

Jeff Durbin Instructing top photo, Bottom, beta-testing a new course.

TLC Continuing Education Course Material Development

Background
Technical Learning College is the technical division of the Love of Christ Bible College and was founded in 1999 in Chandler, Arizona. Melissa Durbin is the school's Founder and Dean of Instruction. The college was founded to fill a need in providing hands-on-operator training and to make Disciples of Christ.

The first professional trade that we started training students for was water and wastewater in 1999 and the pesticide industry in 2000. These two professions broaden our environmental educational field. Next was the demand to provide continuing education for the nursing industry and this need took two years to find adequate instructors and materials. Since then TLC has educated approximately forty thousand students in six different disciplines and/or professions. TLC has been providing educational training at facilities throughout Arizona, providing a mobile classroom for rural Arizona for approximately 20 years and at stationary classroom facilities located in Chandler and in Phoenix for approximately 5 years. Back in June 2003, TLC received IACET continuing education approval for our education training. Subsequently, we have dropped IACET for our accreditation organization does not recognize this agency.

Over 30 different governmental agencies recognize and accept TLC's continuing education training. Other state agencies will regularly invite TLC Instructors to travel to their state and train their operators using TLC's training materials and techniques. Other state agencies will often recommend TLC to their operators to utilize TLC's training and professional development materials.

Private College
As a private religious college, profile, scope, character and community engagement differ greatly from that of other institutions. TLC is an *enterprise* responsible for its own fate, and in which it *invests*. TLC's structure has always been intended to meet the needs of working professionals. Comparisons to other major educational and member-based institutions demonstrate the full extent in training costs. The overall cost rankings of these other institutions including sources of revenue (tuition and fees, state appropriations, federal grants and contracts, all other grants and contracts, gifts, investment income, membership fees, and other income sources) place TLC overall educational costs to the student far below peer institutions. The situation becomes untenable when one considers other sources of revenue per student that is collected by other institutions. TLC can continually re-organize and re-focus our anchor course offerings and on-site training as a means of increasing flexibility, coordination and promoting beneficial synergies and cost effectiveness.

Philosophy
The Technical Learning College believes that every student has the innate ability and intelligence to learn and acquire technical skills. Students have knowledge about their abilities and skills to enhance their knowledge and professional skills. A disciplined learning environment, with innovative and viable community-based academic and vocational curricula, will produce a competent, educated, and self-reliant participant. We strive to teach and instill a learner's proper identity and purpose in respect to their profession.

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 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.

Focus

Technical Learning College was established as a comprehensive academic institution of higher learning. TLC offers a wide range of quality academic programs that promote the development and the application of acquired knowledge. Central to our goal of training tomorrow's leaders is the acquisition of problem-solving skills and the maturation of both intellect and character. TLC's programs are offered through both conventional classroom courses and in distance learning flexible formats that make it possible for working adults to achieve their educational goals. TLC's staff and faculty are committed to providing our students with the very same personalized service that has been and will remain the hallmark of this institution.

Goals

The goals of Technical Learning College are as follows:

- To offer a quality education, certificates, and continuing education.
- To provide students with a higher learning, nondiscriminatory environment.
- To serve as a catalyst for academic progress for all students.
- To establish relationships with other institutions of higher learning.

Our Reporting Structure of Student Training

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, Kentucky, Texas and New York. The students' data will be entered electronically to the appropriate State Agency and will be issued a certificate of completion. Approximately half the students are tracked by the computer once they download the course or pay for it online.

TLC Administrative Responsibilities

To ensure that the evaluation system adopted is credible and acceptable, faculty members must have a strong hand in its development and able to encourage the instructors in mastery of the various subjects. To promote compatibility within the school, standards are reviewed, understood, and accepted by all groups involved in the promotion and tenure review process.

Ensuring a Suitable Physical Learning Environment
In TLC's Classrooms, it is essential to monitor ambient noise, lighting, indoor air quality and/or thermal comfort of the school's physical building and its location within the community. The physical environment of the school speaks to the contribution that safe, clean, and comfortable surroundings make to a positive school climate in which students can learn.

For Distance Based Courses, a decent, quiet, safe, and secure facility is essential to successful of our continuing educational programs.

Adult Education Policy
Adults engage in systematic and sustained self–educating of learning adults engage in beyond traditional schooling, encompassing basic literacy to personal fulfillment as a lifelong learner.

Adult education reflects a specific philosophy about learning and teaching based on the assumption that adults can and want to learn, that they are able and willing to take responsibility for that learning, and that the learning itself should respond to their needs. TLC recognizes this concern and promotes proper identity and purpose to the student to recognize that there are water/wastewater professionals. We hope that the student is driven by what one needs or wants to learn, the available opportunities, and the manner in which one learns, adult learning is affected by demographics, globalization and technology.

TLC focuses on Two Different Adult Learning Audiences
Formal – Structured learning that typically takes place in an education or training institution, usually with a set curriculum; like onsite training for operator certification review or math classes or with our distance-based correspondence courses.
Non-formal – Learning that is organized by educational institutions but non credential. Non-formal learning opportunities may be provided in the workplace and through the activities of civil society organizations and groups; like with our safety or pollution control classes.

Evaluating Courses and Instructors, Conducting Course Audits
Every classroom training and continuing education distance-based course comes with Student Survey. We track these surveys and the commentary and numbering values and record this data primarily as part of our beta-tracking system. This information is also used to qualify and assess the Instructor. We invite constructive criticism from our peers and Subject Matter Experts to help us in improving our services. We do an annual re-evaluation of all the current CEU courses and objectives to ensure that these are up-to-date and contain relevant data. We make improvements daily.

Quality Assurance Factors of Our Training Activities
- TLC evaluates compliance with policies and procedures.
- TLC evaluates adherence to instructional procedures described by the sponsor or the State Agency.
- TLC evaluates whether course content is presented as approved by the State Agency.
- TLC evaluates the ability of a course to meet the intended learning outcomes.
- TLC evaluates and ensures the course content for appropriateness in meeting both the objectives of the course and the goals of the State training program or other environmental program.
- TLC evaluates and ensures the quality of instruction presented by the instructor with surveys and commentary.

- TLC evaluates the quality and timeliness of instructor feedback (particularly with respect to distance education).
- TLC evaluates and ensures that the training activity description as presented in any catalog or marketing materials is accurate.
- TLC evaluates and ensures the general effectiveness of a training activity.

Description of Administrative Procedures
Our administrative and recordkeeping procedures are quite redundant in that we first record the students' information into our database. Once the student completes the course assignment, we record the date, check the driver's license, call the student to review the information, State Approval ID number and grade the assignment. We will enter this data into the student database and if necessary, we will report the credit to the State.

Next, we issue a certificate of completion and email that and the students test score and commentary to the student. We make a copy of the registration page and either print it or make a copy of it and place a copy in the hard file after it is scanned and electronically filed in three different databases to ensure that we do not lose this data.

Personnel Performance Review
TLC is implementing an Employee Performance Annual Review EPAR on all employees and during that time we are performing a background security check-up to ensure that our clients are satisfied with our security so that we can conduct training on various government secure locations. We are accountable to our Board and to the State Agencies who accept our courses.

Record Retention
All of our data is backed up in triplicate, and the data is stored indefinitely. We have the data regularly scored off site to ensure that we have a back-up in case of fire.

Course Designers and Contributors Introduction

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.

Professional Profile

Chris Durbin is a dedicated instructor at TLC with a decade of experience in environmental course instruction and curriculum development. As a subject matter expert (SME), Chris specializes in water and distribution-related courses, bringing a deep understanding of both theoretical concepts and practical applications to his students.

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.

Education

- Liberal Arts Associates Degree in General Studies, Yavapai Community College, Prescott, AZ (2013)
- Applied Science Associates Degree, Yavapai Community College, Prescott, AZ (2022)

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.

Subject Matter Experts and Technical Writers Detailed

Melissa Durbin: A Leader in Environmental and Safety Technology Education

Celebrating Over Three Decades of Excellence in Technical Training

Professional Background
Melissa Durbin brings an impressive 30 years of experience to the field of environmental and safety technology training. Her journey began in 1987 with the City of Phoenix, where she entered the Water Services Department. Over the course of 11 years, Melissa advanced through various roles, culminating in her position as Supervisor Trainer. This foundational experience established her as a respected authority in technical education and water services.

Academic Contributions
Melissa has dedicated approximately eight years to instructing at Gateway and Rio Salado Community Colleges, where she taught a comprehensive array of water and wastewater courses. Her commitment to advancing education is evident in her pivotal role in developing and implementing Advanced Water and Wastewater Treatment programs for both institutions. Melissa's expertise also led her to design the Reverse Osmosis (RO) program at Gateway Community College, where she crafted the curriculum and facilitated the setup of an RO skid, enhancing hands-on learning opportunities for students.

Hands-On Industry Experience
In addition to her academic work, Melissa boasts over six years of practical experience in advanced water treatment, including three years specializing in wastewater treatment with the Tonto Apache Tribe. Her dual focus on instruction and direct application of technical skills underscores her holistic approach to professional development in the water and wastewater industry.

Certifications and Program Leadership
From 2000 to 2007, Melissa and her colleague Jeff served as State of Arizona Department of Environmental Quality approved testing proctors for operator certification examinations. Melissa's extensive background encompasses safety and health program development, training, safety

audits, and consultancy for numerous clients in the water and wastewater sectors. Her commitment to operator certification training and professional development is further demonstrated through her work with Technical Learning College, where she authored and refined numerous educational courses.

Influence and Recognition
Melissa has taught over 40,000 students throughout her career, a testament to her impact and dedication as an educator. She serves on the Inter-Tribal Council Operator Certification Board and is recognized as an Inter-Tribal approved continuing education and professional development trainer. The Inter-Tribal Council stands out as the only federally recognized non-state operator certification agency, highlighting the significance of Melissa's contributions to tribal and non-state certification efforts.

Teaching Skills and Achievements
Melissa's extensive educational background and hands-on experience have enabled her to become an approved Operator Certification and Training provider in more than 40 states and Canada. As a prolific author, she has written over 50 technical manuals, and her courses have received acceptance for continuing education by over 50 government agencies. Additionally, Melissa is an approved structural and agricultural pesticide education provider in Arizona, broadening her influence within environmental health and safety education.

Legacy and Continuing Impact
Melissa Durbin's career is marked by her unwavering commitment to technical education, hands-on training, and professional development. Her leadership, expertise, and dedication have shaped countless students and professionals, ensuring the continued advancement of environmental and safety technology across North America.

Jeff Durbin: Expert Educator in Water and Wastewater Technology

A Leader in Training, Safety, and Water Quality Across US

Introduction
Jeff Durbin is a renowned educator and industry expert who has shaped the careers of thousands of students throughout Arizona, primarily in the fields of water and wastewater technology. His dynamic approach to teaching and his passion for environmental subject matter have made him a sought-after speaker and instructor.

Teaching Experience and Approach
Jeff has dedicated much of his career to instructing students in water and wastewater technology, as well as health, safety, and industrial hygiene. Known for his engaging teaching style, he leverages the latest technologies to create exciting and interactive classroom experiences. As an extemporaneous speaker, Jeff excels at delivering complex technical topics, particularly those related to operator certification, health, chemistry, and biology.

Professional Background
Jeff's journey began in the water distribution field, where he spent approximately seven years mastering practical skills and knowledge. He then transitioned to the Water Quality Division for another decade, focusing on biology and water quality. During his time in distribution, Jeff gained hands-on experience with appurtenances, valves, backflow assemblies, fire hydrants, and various piping systems.

Technical Expertise
Jeff's expertise includes managing water main breaks, replacing water service connections, implementing proper disinfection techniques, and overseeing emergency field procedures. His strong suit lies in distribution and water quality, with a particular focus on hydraulics, backflow prevention, and maintaining water quality standards.

He possesses a deep understanding of situational conditions that can lead to backflow and is adept at preventing such occurrences. Jeff learned these skills at Gateway Community College and continues to educate other operators on the importance of adhering to principles and SDWA/EPA rules during shutoffs or maintenance on water mains.

Groundwater and System Troubleshooting
Jeff is highly knowledgeable about complex groundwater storage systems and the processes involved in storing, pumping, and chlorinating groundwater before it enters distribution. His troubleshooting abilities are well regarded in both water distribution and wastewater collection, enabling him to address and resolve system issues efficiently.

Safety and Regulatory Compliance
Well-versed in safety rules and regulations for water and wastewater operators, Jeff emphasizes the critical importance of following correct procedures. His mastery comes not only from study but from practical, real-world applications, ensuring safety is never compromised in the field.

Sampling and Environmental Assessments
With extensive experience in water and wastewater sampling, Jeff has conducted numerous test programs and environmental assessments. He has taught thousands the fundamentals of proper sampling and preservation, as well as compliance with SDWA regulations regarding maximum contaminant levels and operator certification. Jeff's expertise is frequently sought for advice on sampling regulations and best practices within the industry.

Academic Background
While employed at the City of Phoenix, Jeff attended Wayland Baptist University, learning the intricacies of biology and chemistry. He uses this academic foundation to teach in a clear, accessible manner, helping even those who consider themselves "unteachable" master essential math formulas and calculations.

Conclusion
Jeff Durbin's unique blend of hands-on experience, technical mastery, and engaging teaching style has established him as a leader in water and wastewater technology education. His commitment to safety, regulatory compliance, and student success continues to impact the industry, making him one of the most respected instructors and speakers in the field.

Other Wastewater/Water Subject Matter Review Experts

A few of TLC's Staff members, technical writers, course reviewers, research and copy 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 Technical Writer, S.M.E., 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 Honeywell and the City of Phoenix, and is a motivational/inspirational speaker nationally and internationally.

Dr. Pete Greer Technical Writer, S.M.E., retired biology instructor. Chemistry and biological review. 17 years as a high school instructor and national expert on science.

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

Peter Easterberg Technical Writer, Copy Editor Detail-oriented technical writer/technical editor/desktop publisher/copy editor. 17 years' experience editing and writing feasibility and trade-off studies, test procedures, specifications, user manuals, company policies, HR forms, and ISO-9000 documents.

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.

Cassie Clark, Office manager – Admin Staff – Supervises all admin staff and is responsible for all student concerns and all grievances. Responsible for all student data, attendance, grades and monthly reports. Responsible for course and registration security and providing records to State officials. Providing customer service to all customers.

Candice Curtis, Administrative Specialist- Admin staff - Student resources, inputs class registrations, process entry forms and finial grades in the record database. Reviews all graded assignments, documents, comments, remedies all student related problems concerning grades, learning objectives or assignments. Answers to the Office Manager.

Continuing Education Course Development Summary

Developing a good CEU course requires a considerable amount of planning. We will provide a general course development process that works well when designing our courses.

TLC course development typically has five main phases:
1. Instructional Design Phase (Task Analysis and Training Needs Assessment)
2. Storyboard Phase (Instructional Design phase)
3. Alpha Build (Static testing)
4. Beta Build (Dynamic testing)
5. Final Build (Final Edition)

1. Instructional Design Phase
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 American 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 two training formats; conventional classroom, and distance paper based training.

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 changes are performed based on changes in technology, evaluations of the participants and regulatory changes. Materials are assed yearly or as needed to ensure no significant changes are made. If this occurred, the course would be re-evaluated.

2. Storyboard Phase (Instructional Design phase)
In this phase a complete outline of the course content and the course structure (grouped into Learning Objects) is created. The chief Instructional Design phase deliverable is the Instructional Design Document (IDD).

It outlines each Learning Object and its:

- Description (or title)
- Enabling or learning objective
- Keyword(s)
- Knowledge Content (actual knowledge content to be transferred to the learner)
- Suggested teaching aids (visuals, interactions, review components) if available.
- Practice exercises
- Test questions (Final Examination

The storyboard phase is the creation of the course “blueprint”, that specifies:

- The overall goal to be made for each Learning Objective
- All media and artwork to be created
- Copy editors provide guidance and direction.
- This step allows all stakeholders to review the material and to enter comments or notes and the course will be given approximately two years for final draft.

3. Alpha Build (Static testing)

- The Alpha Build deliverable is the first version of the actual CEU course, developed in accordance with the approved IDD and storyboard.
- The Alpha build is considered a near-complete build of the course, although some course features are generally not created or incorporated at this stage, including audio files, video files (if required), or test questions.
- Static testing involves learning objective verification, whereas dynamic testing involves learning objective validation. Together these improve course content and learning goals.
- Static testing is often implicit, as proofreading, plus when text/copy editors check learning objectives, course structure, syntax and data flow as static program analysis.

4. Beta Build (Dynamic testing)

- The Beta Build deliverable is the second fully functioning version of the CEU course.
- The Beta Build incorporates the resolution of any issues identified by the Alpha build review.
- Dynamic testing takes place when the program (course and final assignment) itself is run.
- Dynamic testing often begins before the program is 100% complete to test particular sections of assignments to provide editing feedback. Typical review techniques for this procedure are utilizing incarcerated student volunteers, Subject Mater Experts and Course Developers (peer review).
- Ideally, State Agencies will have input or suggestions for overall course learning goals and objectives.
- Beta Tests for CEU courses are not meant to review the content. A subject matter expert (SME) provided the content, and probably double- and triple-checked it for accuracy. The purpose of the Beta Test for CEU course is simply to check the effectiveness,

usability, and functionality of the course from a typical user perspective. Is it easy to understand the course content? Are the assessments (exanimations) intuitive or well explained? Do readers get bogged down anywhere? Do the learners learn? What was the time spent on topic? What did you understand?

Course Training/Assessment Needs Methodology
Technical Learning College identified training/assessment needs by placing identifying them in two categories; internal and external.

1. 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

5. Final Build (Final Edition)

- The Final Build deliverable is the completed CEU course incorporates all issue resolutions required because of the Beta Build review process.
- The CEU course is submitted to State Agencies for review and final comments or corrections are submitted to the editor for incorporation.
- Once the final build is approved and accepted and/or reviewed by State Agency, the course is made available for students.

Awarding CEUs and Maintaining Learner Records

Students receive informational (registration forms) packets prior to course start dates that include course requirements. This is accomplished as listed:

Distance learning participants are tracked by start and finished dates by paper and electronic files. Students receive a course packet that contains reading assignments that correspond to completion dates including competence assessments. Upon completion, the student has the option to fax, mail, or email the completed assignment back to administration and the information is logged with a hard copy and electronic file. Students are given ninety days to complete the course. Policies include student information (extension information) in case the students cannot meet the requirements.

Classroom Courses

Classroom courses use rosters that include sign-in and sign-out or the instructor signature is required to show proof of attendance at the end of the course. This ensures that the participants are attending the entire tracked hours for satisfactory completion.

Rewarding Curriculum Hours

The director (Dean or Admission) will calculate the CEU as follows:

CEU Definition

One CEU = ten contact hours of participation in organized continuing education/training experience under responsible, qualified direction and instruction.

Contact Hour Definition

Contact hour = one 60-minute clock hour of interaction between learner and instructor OR learner and materials which have been prepared to cause learning.

Contact implies a connection between a learner and a learning source. For the CEU, that connection is two-way. The instructor or learning source must monitor the learner's progress and provide some form of feedback to the learner. This definition applies for face-to-face interaction as well as distance learning programs.

What can be counted:

The following learning activities are examples of types of activities to include when calculating contact hours for CEU:

- classroom or meeting session time led by instructor and/or discussion leader;
- activities, in which a learner is engaged in a planned learning program in which the learner's progress is monitored and the learner receives feedback. (Examples include, but are not limited to, independent study, computer-assisted instruction, interactive video, web site learning, and planned projects.);
- field trips, projects, and assignments which are an integral part of a learning program; and/or
- learner assessment and learning program evaluations.

What CANNOT be counted:
The types of learning listed below can produce worthy learning and are occasionally recognized by the professions and licensing boards; however, they do NOT meet Technical Learning College criteria and should be quantified with units of measurement other than the CEU.

- Unplanned
- Unsupervised
- Non-sponsored
- Anything that is not approved by a State Agency

The following activities are not intended to receive the CEU. These activities may be worthwhile learning experiences; however, they should be measured and documented by some form of measurement other than the CEU.

Academic credit courses: CEU may be awarded for academic credit courses which meet the CEU criteria; however, individual participants should not receive both CEU and academic credit.

Association membership and leadership activities: Holding membership or serving in some leadership capacity in an association or society does not qualify for the CEU.

Committee meetings: Participation in committee meetings and activities do not qualify for the CEU.

Entertainment and recreation: CEU may not be awarded for attendance at cultural performances, entertainment, or recreational activities unless they are an integral part of a planned course, which meets the CEU criteria.

Individual scholarships: CEU may not be awarded for independent writing such as articles, books, research reports, or presentation of papers outside of a planned, directly supervised continuing education/training experience that fulfills the CEU criteria.

Mass media learning programs: Learning programs delivered through the mass media (e.g., television, radio, newspaper) do not qualify for CEU, unless these presentations are an integral part of a planned learning program, which meets the CEU criteria.

Some meetings, conventions, exhibitions: Meetings, conventions, and exhibitions, which attract large numbers of participants, involve different activities, and are conducted primarily for information sharing purposes, generally do not qualify for the CEU. Planned learning activities within such learning programs, which meet the criteria, are eligible for CEU.

Travel: Travel or participation in a travel-study program does not qualify for CEU, unless the educational component of travel-study program meets the CEU criteria.

Unsupervised study: Individual, self-directed study or other form of independent learning experience, which is not planned, directed, and supervised by a provider, does not qualify for CEU.

Work experience: On-the-job training and other work experiences do not qualify for CEU unless the work experience is structured as part of a planned and supervised continuing education experience that meets the criteria. CEU are not to be awarded for life or previous work experience.

Breaks, lunch periods, and periods which are devoted to administrative tasks, such as student introductions and record keeping, may not be counted.

Minimum hours: CEU should not be granted for learning programs that are less than one hour in length. Sessions within a learning program may be of any length. A learning program of short duration, one or two hours, often does not warrant the degree of planning required by the criteria. Caution should be exercised with shorter length learning programs to ensure their adherence to the criteria.

Counting minutes in the contact hour
The 60-minute hours are the standard for awarding CEU.

Calculating the CEU
Determine the number of contact hours by adding all countable portions of the learning program per instructions above. (Example: A learning program has six 50-minute sessions with 10 minutes between for set-up. The number of contact hours would be computed as: 6 X 50 = 300 total minutes in organized, interactive learning / 60 = 5 contact hours.)

Divide the number of contact hours by 10 to get the number of CEU. (For the example above: 5/10 = .5 CEU.)

CEU may be expressed in tenths of a CEU (i.e., 17 contact hours equate to 1.7 CEU; 3 contact hours equate to .3 CEU). Do not express the CEU past the tenths place (i.e., if your calculation should be 1.78, express this as 1.8 CEU)

Self-paced Programs
Self-paced programs include activities or courses in which learner's progress at their own pace. Technical Learning College (TLC) establishes a standard number of contact hours based upon the average number of hours required of several representative learners (pilot group) that complete the course or program. Each member of the pilot group records the actual amount of time spent completing the activity, course, or program. The total hours spent by all members of the sample is totaled, averaged, and divided by 10. The participants of the pilot program do not receive CEU's for the pilot or course CEU determination study. Our preferred policy that the assessment is a proctored closed-book examination.

Example:
Course A is a self-paced home study course with a post-test. Interaction with the instructor is by mail or telephone. To arrive at an average time for completion of the course, five individuals were selected to complete a pilot course. Each participant recorded the actual amount of time spent completing the course as follows:

Student 1: 16 hours Student 2: 10 hours
Student 3: 8.5 hours Student 4: 12 hours
Student 5: 14.5hours
Total: 61 hours; Average: 12.2 hours or 1.00 CEU

ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY

MELISSA M DURBIN, OP006383

has complied with the requirements for operator certification in the State of Arizona pursuant to Arizona Revised Statutes, Title 49, Chapter 2, Articles 9 and 10, and Arizona Administrative Code, Title 18, Chapter 5, Article 1. Therefore, the Arizona Department of Environmental Quality issues this Certificate.

Certificate Number	Grade and Classification	Expiration Date
76261	Grade 4 Water Treatment Plant Operator	6/30/2019
76263	Grade 4 Wastewater Treatment Plant Operator	6/30/2019
76264	Grade 4 Wastewater Collection System Operator	6/30/2019
76262	Grade 4 Water Distribution System Operator	6/30/2019

ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY

JEFFREY DURBIN, OP006180

has complied with the requirements for operator certification in the State of Arizona pursuant to Arizona Revised Statutes, Title 49, Chapter 2, Articles 9 and 10, and Arizona Administrative Code, Title 18, Chapter 5, Article 1. Therefore, the Arizona Department of Environmental Quality issues this Certificate.

Certificate Number	Grade and Classification	Expiration Date
71459	Grade 1 Wastewater Treatment Plant Operator	11/30/2018
71460	Grade 4 Water Distribution System Operator	11/30/2018
71461	Grade 4 Water Treatment Plant Operator	11/30/2018
77688	Grade 1 Wastewater Collection System Operator	8/31/2019

Community College Certificate

№ 19692

The
STATE BOARD of DIRECTORS for COMMUNITY COLLEGES of ARIZONA
hereby grants to
MELISSA M. DURBIN

the ARIZONA COMMUNITY COLLEGE *REGULAR A.I.c.* Teaching Certificate entitling the recipient to serve as a professional employee in the Community Colleges of the State of Arizona under the Board's jurisdiction. Issued this *22ND* day of *APRIL* 19 *98*.
Valid for life unless revoked.

OFFICIAL SEAL 1960

Donald E. Runyan
Executive Director
J.O. Beech
Chairman
STATE BOARD OF DIRECTORS FOR COMMUNITY COLLEGES OF ARIZONA

Teaching Field: *WATER/WASTEWATER TECHNOLOGY*

RENEWAL

Community College Certificate

№ 55181

The
STATE BOARD of DIRECTORS for COMMUNITY COLLEGES of ARIZONA
hereby grants to
JEFFREY R. DURBIN

the ARIZONA COMMUNITY COLLEGE **SPECIAL** Teaching Certificate entitling the recipient to serve as a professional employee in the Community Colleges of the State of Arizona under the Board's jurisdiction.

Issued this *5TH* day of *APRIL* *2002*

* *Academic*
** *Occupational*

Pete Hernandez
Executive Director
Chairman
STATE BOARD OF DIRECTORS FOR COMMUNITY COLLEGES OF ARIZONA

Pesticide Training Qualifications

Melissa Durbin

Agricultural WPS Train-the-Trainer – Yuma, AZ 2016

College Teaching Certificate 1998

Co-written 20 different nationally accepted pesticide training manuals over a 25-year span.

Co-written 15 different interactive LIMS – computer-based pesticide courses.

Trained pesticide applicators (structural and agricultural) since the year 2000 in approximately 10 different states. Classroom, correspondence and interactive formats.

USDA Subject Matter Expert

Jeff Durbin

Arizona Structural Pesticide License- 2004 – Aquatic, Industrial, Wood destroying, Wood preservation

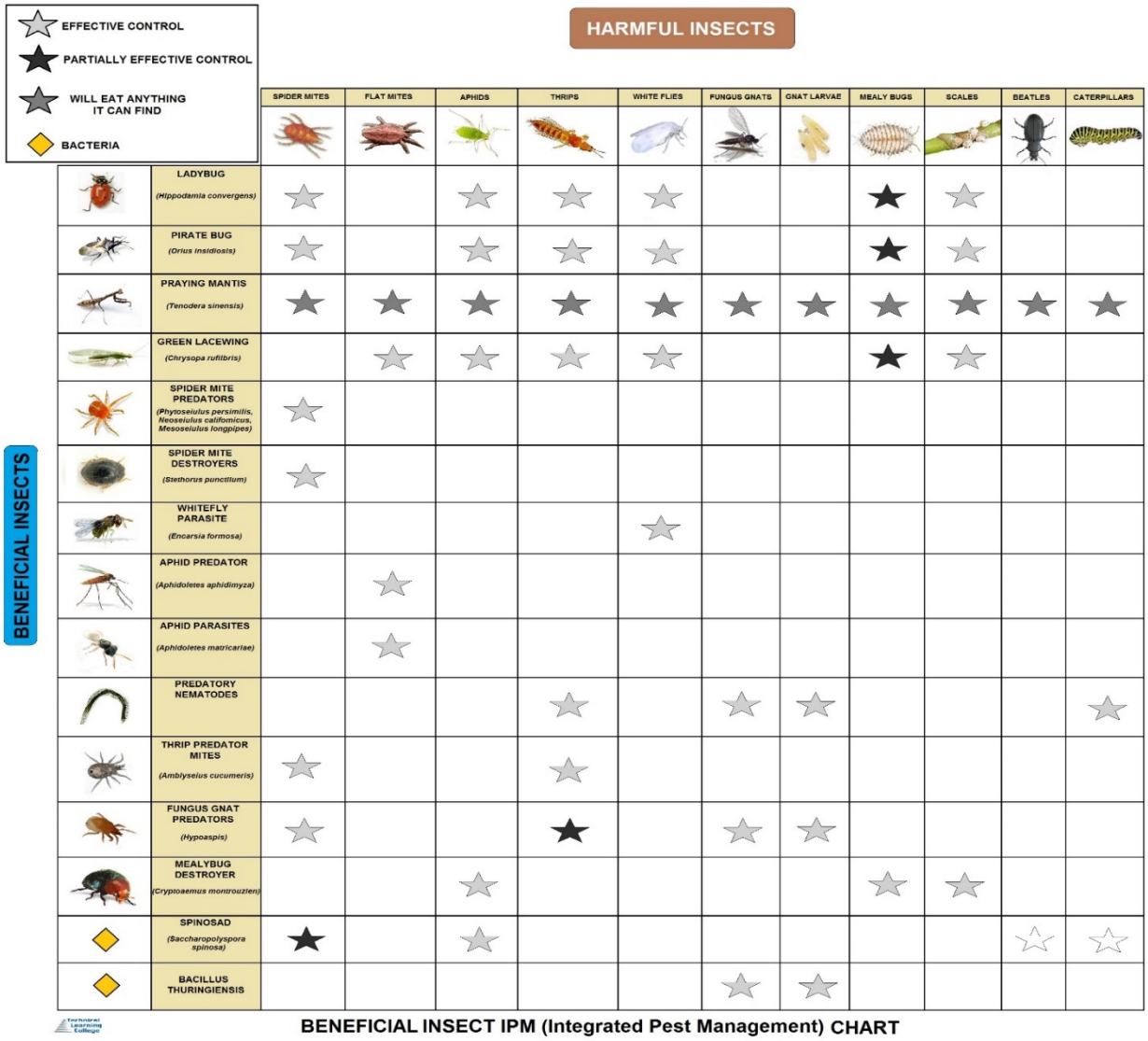
Agricultural WPS Train-the-Trainer – Yuma, AZ 2016

College Teaching Certificate 2004

Co-written 20 different nationally accepted pesticide training manuals over a 25-year span.

Co-written 15 different interactive LIMS – computer-based pesticide courses.

Trained pesticide applicators (structural and agricultural) since the year 2000 in approximately 10 different states. Classroom, correspondence and interactive formats.



BENEFICIAL INSECT IPM (Integrated Pest Management) CHART

Example of TLC's pesticide artwork.

Academic Research Section

Technical Learning College' s (TLC's) continuing education course material and assessment techniques 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 the two primary Instructors, Subject Mater Experts and Technical Writers have trained and/or certified more than forty thousand students throughout the U.S. These two Instructors teach on a daily basis in a classroom setting throughout Arizona and through distance learning methods to students worldwide. See below for more information.

Both Melissa and Jeff have been national approved instructors since 2001. They have over thirty approvals from various state agencies from Texas Commission of Environmental Quality (TCEQ), Pennsylvania Department of Environmental Quality (PA DEP), Ohio EPA to New York Department of Environmental Conservation (NYDEP) and New York Department of Public Health (NYDH).

***Qualifications**:* Technical Learning College instructors and subject material experts for this proposal ideally meet the following criteria:

1. Possess teaching certificates from the State Board of Directors for Community Colleges of Arizona or possess a degree from an university.
2. Have Operator Certification (Grade 4) in all disciplines instructing.
3. Have at least twenty years' experience in the water and wastewater field, or depending on education ten years is acceptable.
4. Have at least ten years' experience of water training classroom instruction.
5. Have written valid operator certification examination questions and training manuals or equivalent.
6. Have at least 5 years teaching California Sacramento and AWWA courses, or 5 years of TLC materials.
7. Written over 10 different water/wastewater safety related training manuals.

Technical Learning College has trained thousands of individuals throughout the past 15 years throughout the United States and for Inter-Tribal Council. Approximately half of this training has been for operator certification examination preparation while the other half was for safety programs and water related continuing education.

Policy for determining the Needs of an Audience, Course Objectives and Planning

Primary focus to properly identify your target audience i.e. water treatment and their needs, i.e. electrical, safety, compliance. Conducting an audit of current training materials and comparing the results with training results or skills or objectives to the needs expressed by student surveys and commentary from staff, students and governmental officials. Doing this also prioritizes the objectives for the development of determining course objectives or planning the future training event or manual. This target audience should also include the members of TLC design team; whose support is essential to the success of the training program.

Needs Objectives
Our program should have specific, measurable objectives such as: build awareness of the need for comprehensive training; if that means making a set of manuals or one master manual. To follow the lead of various State Agencies, I.E. US EPA. To foster the proper identity and purpose of the water/wastewater professional.

Evaluating and Approving Course Content
TLC utilizes various governmental (US EPA) information to determine the needs of course development and directions. Many times we utilize Needs-To-Know for the basis of our continuing education courses.

TLC has primary used Training Provider Manual from 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. Approving course content is generally determined by the course designer and is based upon several complex factors, size of course, specific audience, depth of course, price of course and type of assessment. Other areas that are factored in are alpha and beta testing and rights and artwork development costs.

Ensuring Consistency when Multiple Instructors and/or Developers
Learning Analytics: TLC is continuously seeks to improve our CEU courses. As increasing types of data become available through student participation in courses, learning analytics (course correction) specialists are finding ways to use this information for decisions about course materials and revisions. Standardizing courses makes it easier to measure their effectiveness and control changes.

Learning Objectives: TLC prefers to use editors who are familiar with the Chicago Style of editing and to utilize “Verb List for Objective Construction”. We also need Staff to recognize the needs of reinforcing the proper identity and purpose of water/wastewater Professionals.

Administrative Purposes: TLC utilizes course design from the requirements in the Pennsylvania Training Provider Manual as our design standard.

Accreditation and Quality: All courses are Alfa and Beta tested and undergo many revisions before the public peruses the material.

Evaluating and Approving Instructional Methods
The most important consideration in our teaching evaluation, both for improvement purposes and for personnel decisions, is the use of multiple methods of teaching evaluation devices involving multiple sources of data, primarily feedback from students and passing rates of assessments.

Qualifications for TLC Course Instructors and/or Developers

Qualifications for TLC Course Instructors and/or Developers
For water/wastewater: a grade four operator certification or education level with 5 years of operational experience in that field in which one is teaching or writing about. Degree in natural or physical science or math. Possess the ability to teach others and not simply facilitate. Ability to find the antithesis of a subject. Ability to write using the four "C" s. Ability to teach basic water math without any aids except calculator. Should have charisma and able to create drive in students. These qualifications change due to various course needs or requirements. Example, pipefitting would require a plumber or pipefitting background of 5 years. Should be able to speak extemporaneous on a wide range of related subjects. Ability to make a PowerPoint Presentation with accompanying study guide. Or possess a higher education degree with 5 years of training expertise.

Assess Achievement of Course Objectives
There are several ways we assess student learning and all are linked directly to our learning outcomes, we have two types of assessments and these are primarily used in beta-testing, with course correction implementation and in our training survey is used for hands-on training.

- Our Assessments or assignment will align directly with learning outcomes.
- Our Assessments will require students to use their knowledge base, think critically and solve problems and emphasize knowledge construction, troubleshooting, elaboration and evaluation.
- Our Assessments try to reflect/relate to students' interests. For example, increasing their operator grade level or understanding new technologies.
- Just as all students learn differently, students may be able to demonstrate their learning differently as well. We implement various learning techniques to reach all levels of learners.
- We emphasize that specific criteria and analysis is provided for student self-evaluation.

SUMMARY
• Operations and maintenance of public water systems
TLC's Key Personnel possess ADEQ Grade 4 Wastewater Treatment and Wastewater Collections certificates and have been employed by Grade 4 facilities (large POTW) for at least 10 years. This includes several years of field experience in the distribution, water treatment, pollution control, pretreatment, water/wastewater sampling and regulation departments.

• Teaching multi-day training courses for water utility personnel
TLC has provided consulting and training services to over 100 different wastewater treatment/collection facilities in Arizona including for Inter-Tribal Council. Key Personnel possess combined operational and maintenance experience of over 50 years of experience. Melissa has taught 100's of multi-day training courses to operators throughout the United States and Canada.

• Use of adult learning techniques
TLC utilizes *Knowles' theory of andragogy*, in which our trainers recognize that the best resources for learning reside in adult learners themselves. TLC's emphasis in adult education focuses on experiential techniques which tap into the experience of learners, such as lecture, whiteboard,

and PowerPoint, group discussion, problem-solving, case methods, simulation exercises, games, and role-play.

Using a combination of these teaching strategies have a successful impact in passing the operator certification examination. Knowles' theory of andragogy is an attempt to develop a theory specifically designed for adult learning. Knowles emphasizes that adults are self-directed and expect to take responsibility for decisions. Lecture, printed study guide with PowerPoint presentation is our primary transmittal technique. This lecture is used in 15- to 20-minute sections spaced with active learning activities to re-energize participants for the next wave of information

Problem-Based Learning
TLC implements problem-based learning (field and technical examples) which is an instructional strategy that encourages critical thinking and problem-solving skills. Participants confront contextualized, ill-structured problems and strive to find solutions i.e., sampling, pumping, customer service, shoring, backflow, pressure or chlorination solutions.

• Development and use of pre-training and post-training quizzes
TLC was an ADEQ Operator Certification contractor (2000-2007) and has written ADEQ's Operator Certification examination questions. TLC has over 18 years of examination and quiz writing experience. TLC has written both objective and subjective quiz questions and implements both questioning methods during multi-day training events. Melissa has written over 100 water related quizzes.

1) Qualifications of Subject-Matter Expert
Melissa Durbin has written 200 water related continuing education courses that are beta-tested, vetted and accepted by most governmental agencies. She has extensive operational and training experience. She is also recognized by the USDA as a subject-matter expert in water.

Method of Providing Learning Support to Participants

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. We are about the last training provider who answers telephones and talks to the student. 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.

Method of Scheduling and Advertising Courses
Most of our distance-learning courses are open ended and available 24-hours, 365 days a year online. Primarily our business is generated by State Agencies who post our information online. Our secondary method of advertising is word-of-mouth and actual classroom training. We have many return students.

Track Course Registrations
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. Most of these students are electronically tracked once they pay for the course online. We have the ability to electronically monitor the student but are reluctant due to stalking and privacy laws.

Verify and Track Student Attendance
The student shall submit a driver's license for signature verification and track their time worked on the assignment. All students need to make a telephone confirmation to confirm their identity and qualify their assessment/examinations. The student shall sign an affidavit verifying they have not cheated and worked alone on the assignment. All student attendance is tracked on the student attendance database. The signed copies and related paperwork are electronically stored. The hard copies of this information is stored in a different location.

Issue Satisfactory Course Completion Certificate to Students
The student will receive a certificate of completion upon successful course completion. 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.

Conduct Post-Activity Course or Program Evaluation
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 changes are performed based on changes in technology, evaluations of the participants and regulatory changes. Materials are assed yearly or as needed to insure no significant changes are made. If this has occurred, the course would be re-evaluated.

Melissa Durbin teaching

A few of our Copyrighted Training Manuals

TITLE	DATE	COPYRIGHT	ISBN	UPC CODE
Wastewater Treatment	05/07/2007	TX 6-580-136	978-0-9799928-3-4	780979992834
Confined Space	06/19/2007	TX 6-600-031	978-0-9799928-8-9	
Substance Abuse	05/07/2007	TX 6-580-071	978-0-9799928-7-2	
Capacity Maintenance & Operations Mgt.	04/07/2007	TX 6-572-325	978-0-9799928-6-5	
Activated Sludge	06/19/2007	TX 6-600-029	978-0-9799928-5-8	
Arsenic	06/07/2007	TX 6-584-890	978-0-9799928-4-1	
Competent Person	06/19/2007	TX 6-600-030	978-0-9799928-9-6	
Pumping Principles	06/11/2007	TX 6-584-962	978-0-9799559-6-9	
Groundwater Production	06/07/2007	TX 6-584-889	978-0-9799559-7-6	
Hydraulic Principles	04/24/2007	TX 6-558-651	978-0-9799559-8-3	
Water Treatment	04/24/2007	TX 6-582-264	978-0-9799559-3-8	
Laboratory Safety	06/11/2007	TX 6-582-762	978-0-9799559-4-5	
Agricultural Pesticide	06/07/2007	TX 6-582-714	978-0-9799559-5-2	
Chlorine & Disinfection	05/03/2007	TX 6-571-433	978-0-9799559-2-1	
Distribution Basics	04/07/2007	TX 6-572-324	978-0-9799559-0-7	780979955914
Distribution Basics 2nd Ed.	09/06/2007	TX 6-825-267		
Water/Wastewater Sampling	04/07/2007	TX 6-628-700		0006628700

Melissa teaching in a college classroom setting.

ARIZONA FACILITIES THAT HAVE USED TLC

Alvarado Independent School District
Antelope Union High School
Apache Junction Water Company
Arizona - American Water Company
Arizona Game and Fish Department
Arizona Public Works
Arizona State Parks
Arizona State University
Arizona Water Company
Avondale, City of
Bartholomew Engineering
BHP Copper
Buckeye, Town of
Camp Verde Sanitary District
Caterpillar Inc.
Citizens Water Resources
City of Casa Grande
Coolidge, City of
EA2/SYSTEMS
Earth Tech Incorporated
Eloy, City of
Florence, Town of
Gila River Indian Community
Gilbert, Town of
Glen Canyon
Glendale, City of
Grand Canyon Council, Inc.
Hayden, Town of
Herschel Simmons
Hidden Cove Park
Hoque & Associates, Inc.
Jacobs Engineering
JELD-WEN Environmental Department
Litchfield Park Service Co.

PROFESSIONAL REFERENCES

City of Peoria
Cathy Wiestling
8401 W. Monroe Street
Peoria, AZ 85345
623-773-7379

City of Page
Linda Brown
P.O. Box 1180
Page, AZ 86040-1180
928-645-4317

City of Tempe
Holly Bushaw
31 E. 5th Street
Tempe, AZ 85258
(480) 350-2640
Holly_Bushaw@Tempe.gov

City of Scottsdale
Chris Mitchell
9312 N. 94th Street
Scottsdale, AZ 85258
(480) 312-5687
Cmitchell@ScottsdaleAZ.Gov

Arizona American Water
Melvin Huntspoon
15626 N. Del Webb Blvd.
Sun City, AZ 85351
(623) 815-3128
Fax (623) 815-3141
Melvin.Huntspon@amwater.com

City of Chandler
Claire Naylor
P.O. Box 4008 MS 912
Chandler, AZ 85244
(480) 782-3621
Claire Naylor@Ci.Chandler.Az.Us

Far West Water and Sewer Company
Susie Ginn
12486 S. Foothills Drive
Yuma, AZ 85367
(928) 503-4236

Here are a few States that have reviewed and accepted our CEU courses for official CEU credit.

ALABAMA
ALASKA
ALBERTA
ARIZONA
ARKANSAS
CALIFORNIA
CANADA
COLORADO
CONNECTICUT
DELAWARE
FLORIDA
GEORGIA
HAWAII
IDAHO
ILLINOIS
INDIANA
IOWA
KANSAS
KENTUCKY
LOUISIANA
MAINE
MARYLAND
MASSACHUSETTS
MICHIGAN
MINNESOTA
MISSISSIPPI
MISSOURI
MONTANA
NEBRASKA
NEVADA
NEW HAMPSHIRE
NEW MEXICO
NEW YORK
NORTH CAROLINA
NORTH DAKOTA
NY WATER
OETC
OHIO
OKLAHOMA
OREGON
PENNSYLVANIA
PENNSYLVANIA PESTICIDE
RHODE ISLAND
SOUTH CAROLINA
TENNESSEE
TEXAS
UTAH
VERMONT
VIRGINIA
WEST VIRGINA
WISCONSIN
WYOMING

Melissa Durbin showing the proper chlorine gas hook-up procedure. TLC instructors have been to several water providers to show hands-on demonstrations and to teach operators the essentials for providing safe drinking water to the public.