



## Building an Effective Course – And Having It Approved for CEUs

### Intro/Background

This Guide is a tool to provide our Instructor Applicants with:

1. Basics for new Instructors on how to build an effective course for Operators.
2. An idea of what makes a course eligible for EOCP CEUs.
3. Help in promoting a course that is approved – building a course description.



**CHECKLIST:** - As you begin to think about what your course might look like, this checklist can serve as a reminder of some main elements for you to consider:

<input type="checkbox"/> <b>Who</b>	The course is aimed at which participants - e.g. Water and/or Wastewater Operators? Is it a specific “discipline”? For the range of disciplines see: <a href="#">Grow – Career: Getting There</a> . Do they already need to have a certain amount of experience or know certain things, like having their level 1, 2, or 3 certification? If so, say so in your course description.
<input type="checkbox"/> <b>What</b>	Specifically what is covered in the course? What are participants expected to learn? See the section on course/topics and learning objectives for ideas.
<input type="checkbox"/> <b>When</b>	Based on the number of topics and <i>learning objectives</i> , how long do you think participants will need to learn the material -- what is the length of course, e.g. ½ day; 1 day, 3 days?
<input type="checkbox"/> <b>How</b>	How will participants learn/how you help them learn, e.g., will you tell them, then show them, and then let them try? What equipment might you use? How will you and participants know what they learned?

**TIP:** If you read [So You’re Thinking of Applying to be an EOCP Recognized Instructor](#) use notes you made!

### **Who & What: Taking Course Topics & Making Learning Objectives**

It always seems easiest to start with topics – “Okay, what do we need to cover?” *BUT*, it is key to put the participant in the picture! Ask yourself:

*What knowledge and skills should participants have by the end of the course?*

When you answer that question you can take a topic & create a learning objective.

- Examples of how to take topics and translate into them into learning objectives:

**TIP:** Look at other courses on how to frame learning objectives. This is key. - They are used in participants' evaluation of the course.

#### Sample Course Topics

#### Possible Set of Learning Objectives

##### Pump Maintenance (Course Title)

1. Inspecting pumps
2. What to look for
3. Basic maintenance
4. Measuring pump efficiency
5. Testing pumps

*At the end of the course participants will be able to:*

- Plan frequency of inspection for different pumps
- Identify 3 signs of wear/tear on pumps
- Show how to replace pump packing & mechanical seals
- Demonstrate how to measure pump efficiency
- Carry out routine tests to ensure pumps are operating satisfactorily

We *highly recommend* taking a look at the [Association of Boards of Certification \(ABC\) website](#). In particular they provide “Need-to-Know Criteria” for each discipline. When you read any of these Need-to-Know documents look for 3 main elements:

1. A list of “core competencies” – essential tasks & capabilities that have been identified
2. A series of tables with the list of the core competencies and what level of knowledge & judgement is required for each task
3. A list of capabilities required

Not only can these give you some ideas of topics and how to frame them, but learning objectives as well. There are also example exam questions. Note: In the Grow – Career Info part of the TR we encourage both Operators and Employers to use ABC and ECO to help select training!

### What & When: *Course Outline – Course Agenda & Time*

Now that you have your topics, think about:

- How many topics there are.
- Which topics require the most attention because they involve ideas that take time to get across. (You may need to try in a number of ways!) Activities also take time to set up. If participants need to discuss or demonstrate, this also takes time.

**TIP:** Remember - to be a course recognized for CEUs it must be at least 3 hours *not including breaks or introductions!*

This should give you some sense of whether the course needs ½ a day, 1 or 2, or even 5 days.

Now you can begin building your Agenda. You have your topics. In addition to these core topics, every course has certain elements like introductions, breaks, and a wrap-up.

These are important so that participants feel comfortable and actually participate when you get to the core topics. However, these parts do not have CEUs attached to them.

Take a look at the example based on the Pumps Maintenance 1 day (6 hrs of instruction) course.

Note: The parts that do not have CEUs attached are in a darker colour:

#### Examples of what we are looking for

Course Agenda	Time/Hours
Introductions (instructor, group, agenda)	.25
Inspecting pumps	.50
What to look for	1.25
Break	.25
Basic Maintenance	1.75
Lunch Break	1.0
Measuring pump efficiency	1.00
Testing pumps	1.00
Quiz	.50
Wrap-up	.25

## ☑ What & How: *Methods for Success – “Learning Retention”*

At one time, sitting in training was equated with learning. Now we know it doesn't necessarily mean someone:  
1. Understands; 2. Remembers; or 3. Can apply the ideas appropriately.

- **WHAT IS “LEARNING RETENTION” & WHY IS IT IMPORTANT?!?** A successful course is no longer measured by – pardon the expression – the number of “bums in seats”. Nor is it solely by whether participants had a good time (although using humour & engaging them are definitely important!!!).

The goal is to have participants not only understand. We want them to remember *after* the course (and for the exam, if there is one) how they can take what they learned and apply it to their work.

People take in information in different ways. Some learn *best* when they:

1. See the something
2. Hear the something, *or*
3. Try something themselves

When we teach we can't count on having a group that all learn by seeing or all mainly by hearing. (*With our Operators, if anything, more of them are likely best with #3 - trying something!*)

So to be effective we use combinations of methods. That way we can meet more needs.

### Examples of what we are looking for

- **METHODS REGARDED AS EFFECTIVE FOR LEARNING RETENTION.** Usually a range of methods are used to teach. This is what some research said about how much learning people retained after a course by the different methods used:

Lecture/Presentation 5%    Reading 10%    Audio Visual 20%  
Demonstration of it 30%    Discussion group 50%    Practice by doing 75%    Teaching others 90%

When teaching how to do specific tasks, this common approach combines several methods:

1. Tell/present ideas or steps → 2. Demonstrate live or on DVD → 3. Let them try!

**TIP:** Discussing case studies & examples helps people to start to think about how to apply what they learn & recognize it outside the classroom.

### Examples of what we are looking for

Sample Topic	Possible Instructing Methods
Residual chlorine tests	<ul style="list-style-type: none"> <li>Show the parts of the analyser</li> <li>Explain how to do the test</li> <li>Demonstrate how to do the test</li> <li>Divide class into groups &amp; have each student do a sample test</li> </ul>

This example gives you an idea about methods for *one* topic. You can also see examples of how to complete the application in the form itself. It asks you to do an estimate for your whole course.

**☑ How: *Materials & Handouts***

- Courses can use a range of materials and handouts such as manuals, books, booklets, binders, DVDs, and even posters. How do you choose? Ask yourself:

*What information is directly useful to what participants need to learn?*

So a 400 page manual covering Water Treatment or Wastewater Treatment for Level I certification will be too much for a ½ day course specifically on a type of sampling. A booklet from a specialized agency or a handout you have created may suffice. A poster or quick reference card with a diagram could also work, depending on the subject.

- About handouts:
  - ✓ It is always useful to have an “additional reading” or a reference materials list
  - ✓ If you have activities (highly encouraged!), have printed instructions that include the objective(s) and the steps. It helps participants understand what to do.
- Make sure that whatever you provide:
  - ✓ Is accurate and up-to-date (or if necessary provide written notes on what is not)
  - ✓ Matches the content of any assessment given (see Assessment section for definition)

**TIP:** Operators with internet access can benefit from having a list of links to relevant sites.

Sample Course - Topic	Possible Materials
Legal requirements for water systems in BC	Review a copy of <i>Drinking Water Protection Act</i> and provide website info to obtain a copy  Review a copy of <i>Drinking Water Protection Regulations</i> and provide website info to obtain a copy

**☑ How: *Equipment***

- Equipment may or may not be necessary depending on the topic and learning objectives. How do you decide? Ask yourself:

*Is a major part of the topic/learning objective(s) about a process that uses some kinds of equipment?*

Consider what we said earlier about the most effective methods to help participants retain their learning:

- ✓ Demonstrations help;
- ✓ Practice by doing is one of the best methods for learning processes

**TIP:** Operators often work in different scales of systems. If it is not possible to do the full range, pictures can help supplement.

**Examples of what we are looking for**

Sample Course/Topic	Possible Equipment
Valves used in operations	Bring examples of gate, butterfly, globe, plug, diaphragm, check, and pressure reducing valves, and explain operation/uses of each.  Have students operate each valve

## ☑ How: Assessment

- **WHAT IS “ASSESSMENT” AND WHY IS IT IMPORTANT?** An assessment is a kind of a check-in to see whether participants did understand, remember, and even have the capability to apply the learning to a situation. It is a tool to:
  1. See if the training was effective across the group.
  2. Determine an individual participant’s knowledge & skills at the end of the course.  
*Done appropriately, it also helps participants to see what they learned and what they did not.*

**TIP:** *Evaluation* is often used instead of *Assessment*. To avoid confusion we are distinguishing them in this way:

1. *Evaluation* is feedback on the course or the Instructor completed by participants/students in our case:
2. *Assessment* is a tool to measure a participant’s knowledge, skill and/or competency at least at the end of a training session.

**Note:** Assessment tools are not only used at the end of course, but often throughout it to see how things are going. This is especially important with a full day course or longer.

- **ASSESSMENT METHODS.** Common methods include brief quizzes (used throughout longer courses), participants doing a presentation on what they have learned or performing a demonstration, and/or a course exam at the end (can be written or oral). Which one(s) make the most sense? Ask yourself:

*Based on the learning objectives, how can we confirm whether a participant knows/can do what we said they would be able to know/do?*

Quizzes & exams are good ways of getting at what participants know & can include asking them about a variety of situations. Performing a demonstration shows whether they have the skill to do it.

**TIP:** Balance the length of the course with the number of assessments you build into it, e.g.,  $\frac{1}{2}$  day course won't have time to do 3 quizzes & an exam!

### Examples of what we are looking for

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#### Sample Course/Topic

#### Possible Assessment(s)

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##### Small Water Systems

At end of each section, give a 5 question quiz and discuss answers. Ask if there are any points that need to be reviewed before going to next section.

At end of course, give an exam on entire course content and discuss answers.

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## ☑ Course Description – *What Potential Participants Want to Know*

- **BASIC ELEMENTS.** The main objectives of the Course Description are to:
  - Give potential individual participants a basic understanding of what the course covers to see if it matches their needs and they have sufficient knowledge/skill level to attend
  - Encourage organizations to consider whether they have sufficient numbers interested to apply to have a special offering

A good summary description should include:

- ✓ Who should attend – target participants
  - ✓ Any pre-requisites (e.g., required courses, certificates, or other things need to have)
  - ✓ Length of the course
  - ✓ A summary of topics/learning objectives, e.g., participants will leave the course being able to...
  - ✓ Highlights – what is important or beneficial about this course
- For examples see other Training Registry [Course Descriptions](#).
  - Note: All of the elements you created before the Course Description should help you. It will be a summary of many of those things. An upper limit on the characters is stated in the form. It will tell you how many characters you've entered. However, if you want to check the spelling in your Course description, build it in a word processing document and run spell check on it. You can also use the word count tool there. Then cut and paste it into the application form.

Now that you have done all this you will be very well prepared  
when you teach your course!