



Natural Resources Extension Program (NREP)

Building 380, Science & Technology
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<http://www.mala.ca/nrep/>

CPESC Canadian Exam Preparation - Detailed Course Outline (All times shown are approximate)

1. Site Planning and Management

This module introduces the CPESC certification program and general information is provided on the exam structure and format. Principles of soil detachment and sediment transport are covered. Other topics include the impact of sediment on water quality, importance of pre-construction planning, sequencing, scheduling, and preparation of an Erosion and Sediment Prevention Plan.

<p>Agenda (Duration: 45 minutes)</p> <ol style="list-style-type: none"> 1.Scope of Exam Preparation Course 2.Exam Rules and What to Expect 3.Resource Planning 4.Factors that Influence Erosion 	<ol style="list-style-type: none"> 5.Land Development Plans 6.Erosion and Sediment Control Plan 7.Implementation of Erosion and Sediment Control 8.Planning Assistance 9.Construction Sequences Scheduling
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2. Rules and Regulations

Rules and Regulations are presented from a nationwide perspective. Examples of enforcement illustrate how the regulations are enforced and emphasize the importance of professionalism. There is a review of Canada-wide standards in force and upcoming.

<p>Agenda (Duration: 45 minutes)</p> <ol style="list-style-type: none"> 1.Federal Fisheries Act 2.Canadian Environmental Protection Act 3.Canadian Environmental Assessment Act 4.Canadian Council of Ministers of the Environment 	<ol style="list-style-type: none"> 1.Overview of Regional Regulations 2.Enforcement and Compliance Concepts 3.Due Diligence 4.Professional Code of Conduct 5.Regulations: What Really Works?
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3. Erosion Prediction

Erosion prediction is an important component in planning, designing, and evaluating erosion and sediment control practices. This module emphasizes the Revised Universal Soil Loss Equation (RUSLE) for soil loss prediction and the Modified Universal Soil Loss Equation (MUSLE) for storm event sediment yield. Students will work through example exercises to obtain proficiency in applying the equation to construction sites. A scientific calculator with an exponential function is required.

Agenda (Duration: 90 minutes) 1. Erosion Prediction 2. Revised Universal Soil-Loss Equation (RUSLE)	3. Modified Universal Soil-Loss Equation (MUSLE) 4. Procedure for Estimating Gross Sediment Yield 5. Review Problems
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4. Runoff Management (Prediction)

Rainfall/ runoff principles are covered and runoff management measures for site implementation are featured. The Natural Resources Conservation Service (NRCS) Runoff Curve Number Method is used to predict runoff volume from pre/during/post construction sites in several work exercises. Hydrology concepts associated with rainfall distribution, time of concentration, hydrologic soil groups, curve numbers, and runoff prediction are covered.

Agenda (Duration: 90 minutes) 1. Hydrologic Cycle 2. The Hydrograph 3. Factors Affecting Runoff 4. Precipitation	1. Time Parameters 2. Soil Permeability 3. Runoff Equation 4. Runoff Management Measures 5. Review Problems
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5. Soil Stabilization (Erosion Control) (Duration: 60 minutes)

This module covers examples of management practices at various phases of construction, including temporary and permanent methods such as structural and non-structural measures. Vegetation establishment, seed quantity calculations and management strategies related to fertilizer application rates are covered.

Agenda (Duration: 90 minutes) 1. Vegetative Measures 2. Soil Tackifiers or Stabilizers	3. Fertilizer Calculation Example 4. Calculating Pure Live Seed 5. Review Problems
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6. Sediment Control (Duration: 60 minutes)

This module discusses design considerations for perimeter sediment control features as well as treatments for interior drop inlets and catch basins. Alternative practices for dewatering or containment of sediment at construction site work zones are discussed. Turbidity abatement is covered. This module includes an exercise on plan development for a small commercial construction site.

