

CUYAMACA COLLEGE
COURSE OUTLINE OF RECORD

Environmental Health and Safety Management 117 – Stormwater Best Management Practices for Construction

1 hour lecture, 1 unit

Catalog Description

Best Management Practices (BMPs) for Construction provides a comprehensive understanding of erosion and sediment control for construction runoff, and for other construction pollutant sources, following municipal and general construction permit requirements. Students review the predominant erosion and sediment control BMPs for construction runoff before discharging to city stormwater collection systems or waterbodies. BMPs for other construction water quality pollutants such as metals and petroleum hydrocarbons will be introduced. The course distinguishes between BMP major categories such as erosion, sedimentation, and concentrated flow. Students will achieve a better understanding of installing or implementing BMPs as well as inspecting construction BMPs. Common errors in construction BMP installation and implementation will be highlighted. The BMPs for Construction course will benefit those working directly within or contracted to construction projects and provide knowledge for reviewing construction BMP plans, as well as improve inspectors' background to assess BMP implementation. The course may be used as credit for on-going education for those performing BMP implementation or reviewing BMP plans and protocols.

Prerequisite

None

Course Content

- 1) Sediment and pollutants
- 2) Erosion and sediment control
- 3) Runoff control and concentrated flow
- 4) Erosion cover BMPs; raindrop impact
- 5) Sediment control BMPs; settling and filtering
- 6) BMPs for TMDLs including sediment and other construction water quality pollutants
- 7) Scheduled maintenance of BMPs
- 8) Improving BMPs with response to sampling
- 9) Municipal Separate Storm Sewer System (MS4) Permit
- 10) Construction General Permit (CGP)
- 11) Writing and reviewing Construction BMP plans
- 12) BMP Factsheets

Course Objectives

Students will be able to:

- 1) Identify and apply BMP operations and principles.
- 2) Practice maintenance and implementation of construction BMPs.
- 3) Distinguish between correct and incorrect construction BMP implementation.
- 4) Practice completing BMP inspection forms.

Method of Evaluation

A grading system will be established by the instructor and implemented uniformly. Grades will be based on demonstrated proficiency in a subject matter determined by multiple measurements for evaluation, one of which must be essay exams, skills demonstration or, where appropriate, the symbol system.

- 1) Quizzes that measure students' ability to identify and describe construction runoff BMPs predominantly for soil and sediment, including BMP principles.
- 2) Exercises that measure students' ability to review and improve construction BMP plans and complete inspection forms associated with construction BMP performance.

Special Materials Required of Student

None

Minimum Instructional Facilities

- 1) Smart Classroom
- 2) Classroom space for BMP displays

Method of Instruction

- 1) On-line Lecture and discussion
- 2) Hands-on application, on campus.

Out-of-Class Assignments

- 1) **Reading:** Lecture notes, Caltrans and EPA BMP Fact Sheet review, SWPPP (publicly available in SMARTS) CASQA and other organization BMP Fact Sheets included in most SWPPPs; Caltrans BMP Fact Sheets, Review BMP discussions in SWPPPs (from SMARTS), Shasta College erosion and sediment control BMPs, Dirt Time TV BMP video reviews.
- 2) **Writing:** Summarize BMP Factsheets highlights, differences, as well as needed improvements, editing erosion and sediment control plans for effective BMP implementation, develop BMP plans for proposed construction scenarios, presentations for BMPs types and categories, conference proceedings and BMP vendor product reviews.
- 3) **Other:** Observations of construction site BMPs (from public view), observation of BMPs that work and BMPs that fail, develop eye for detail of BMP implementation.

Texts and References

- 1) Required (representative example): California State Water Resources Control Board. (n.d.). *NPDES 2022 Construction Stormwater General Permit*. Retrieved September 24, 2025, from https://www.waterboards.ca.gov/water_issues/programs/stormwater/construction/general_permit_reissuance.html
- 2) Supplemental:
 - a. California Department of Transportation. (2024, March). *Construction site best management practices (BMP) manual* (Report No. CTSW-RT-24-425.11.1). Division of Environmental Analysis, Stormwater Program. Brown and Caldwell. <https://dot.ca.gov/programs/environmental-analysis/stormwater-management-program>
 - b. Dirt Time. (1948). *The Adventures of Junior Raindrop*. <https://dirttime.tv/category/video/>

Student Learning Outcomes

Upon successful completion of this course, students will be able to:

- 1) Inspect BMPs to effectively meet California, Federal, or local authority stormwater standards, review and revise stormwater plans, and update BMPs per sampling results.
- 2) Perform construction BMP inspection field duties safely.
- 3) Evaluate and discuss the relationship and effectiveness of BMPs through knowledge of the BMP mechanisms.

- 4) Relate BMP operations and effectiveness through sampling for protecting waterbodies and watersheds.