

CUYAMACA COLLEGE
COURSE OUTLINE OF RECORD

Environmental Health and Safety Management 220 – Stormwater Runoff Management Regulatory Concepts

1 hour lecture, 1 unit

Catalog Description

Stormwater Runoff Management Regulatory Concepts introduces the background and regulations applicable in stormwater management to workers, managers, and inspectors in industrial, construction, agriculture, tribal and municipal industries. Coursework covers fundamental stormwater rules and regulations, and educational measures behind stormwater and watershed management. Applications include understanding stormwater permit requirements, concepts of water quality, and recognizing Best Management Practices (BMPs) in field settings. The course provides entry-level coursework in stormwater management for those entering or working in stormwater positions and background knowledge for those seeking State or nationwide certifications such as Qualified SWPPP Developer (QSD), Qualified SWPPP Practitioner (QSP), or Qualified Industrial SWPPP Practitioner (QISP).

Prerequisite

None

Course Content

- 1) Watersheds: surface water, groundwater
- 2) Federal and California stormwater regulatory history
- 3) Permit types and applications to industry
- 4) Related jobs and careers in construction, industrial, manufacturing, agriculture, tribal, municipal, and climate change policy
- 5) General pollutant types and sources
- 6) Municipal Separate Storm Sewer System (MS4) Permit
- 7) Construction General Permit (CGP)
- 8) Industrial General Permit (IGP)
- 9) Best Management Practices (BMPs) concepts

Course Objectives

Students will be able to:

- 1) Apply California and Federal regulations to manage stormwater compliance programs.
- 2) Identify stormwater BMPs and SWPPP documentation.
- 3) Identify pollutant types and sources.
- 4) Differentiate between various requirements of industrial, construction and municipal permits.

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 and exams that measure students' ability to identify, describe and apply California and Federal stormwater permits.

- 2) Exercises that measure students' ability to review stormwater inspections and understand programs in compliance with California and Federal stormwater regulations and standards.
- 3) Video presentations/projects measuring the student's ability to determine stormwater management requirements.

Special Materials Required of Student

None

Minimum Instructional Facilities

Smart Classroom

Method of Instruction

- 1) Lecture and discussion
- 2) Field trips, guest lecturers
- 3) Projects, hands-on exercises

Out-of-Class Assignments

- 1) **Reading:** Lecture notes, EPA and CWA documentation and historical review, review the various agencies assigned for protection of water and waterbodies, study the water cycle and changes over time, MS4, IGP, and CGP General Permits.
- 2) **Writing:** Summary of video reviews of CWA and water related regulations, identify the parts of the water cycles and the public perceptions and understandings, draw up a water cycle, conference proceedings and BMP vendor product reviews.
- 3) **Other:** Assess a watershed from field observations including the land uses and water forms, and what agencies regulate.

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: 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>

Exit Skills

Students having successfully completed this course exit with the following skills, competencies and/or knowledge:

- 1) General knowledge of stormwater permits (industrial, construction, municipal), the hydrologic cycle, and common water quality pollutants (e.g., metals, nutrients, sediment).
- 2) Understand the purpose of BMPs, be able to reference factsheets, and apply fundamental safety and inspection practices

Student Learning Outcomes

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

- 1) Apply California and Federal stormwater standards to evaluate permit compliance, analyze site inspections, and assess industry-specific Best Management Practices (BMPs).
- 2) Develop and implement site-specific stormwater compliance programs that align with permit requirements and integrate watershed management principles.