Watershed Science-WR (WR)

Courses

WR 304 Sustainable Watersheds Credits: 3 (3-0-0)
Also Offered As: GR 304.
Course Description: Effects of climate, land use, and water use on the sustainability of water quantity and quality.
Prerequisite: None.
Registration Information: Completion of the AUCC 1B Mathematics requirement. Credit not allowed for both WR 304 and GR 304.
Terms Offered: Fall, Spring.
Grade Mode: Traditional.
Special Course Fee: No.
Additional Information: Biological & Physical Sciences 3A.

WR 419 Water Quality Laboratory for Wildland Managers Credits: 2 (0-4-0)
Course Description: Sampling and determination of water quality parameters.
Prerequisite: None.
Registration Information: Concurrent registration in WR 418.
Term Offered: Spring.
Grade Modes: S/U within Student Option, Trad within Student Option.
Special Course Fee: Yes.

WR 465 Eolian and Fluvial Transport Processes Credits: 4 (3-3-0)
Course Description: Fundamental physical principles of eolian and fluvial transport processes.
Prerequisite: PH 141.
Registration Information: Must register for lecture and laboratory.
Term Offered: Fall.
Grade Modes: S/U within Student Option, Trad within Student Option.
Special Course Fee: No.

WR 474 Snow Hydrology Credits: 3 (3-0-0)
Course Description: Snowfall, accumulation, distribution, physical processes in the snowpack, energy balance, ablation and runoff, measurement methods, runoff forecasting.
Prerequisite: None.
Term Offered: Fall.
Grade Mode: Traditional.
Special Course Fee: No.

WR 486 Watershed Field Practicum Credits: 2 (0-6-0)
Course Description: Field visits to watershed management projects and sites of significant field studies.
Prerequisite: None.
Restriction: Must be a: Junior.
Registration Information: Junior standing. Required field trips.
Term Offered: Fall.
Grade Mode: Traditional.
Special Course Fee: No.

WR 487 Internship Credits: Var[1-6]
Course Description: Supervised work experience in professional settings related to Watershed Science.
Prerequisite: None.
Registration Information: Written consent of instructor.
Terms Offered: Fall, Spring, Summer.
Grade Mode: S/U Sat/Unsat Only.
Special Course Fee: No.

WR 492 Seminar Credits: Var[1-18]
Course Description:
Prerequisite: None.
Terms Offered: Fall, Spring, Summer.
Grade Mode: Instructor Option.
Special Course Fee: No.
WR 495  Independent Study-Watershed Resources  Credits: Var[1-18]
Course Description:
Prerequisite: None.
Terms Offered: Fall, Spring, Summer.
Grade Mode: Instructor Option.
Special Course Fee: No.

WR 510  Watershed Management in Developing Countries  Credits: 2 (2-0-0)
Course Description: Watershed management problems, approaches, and solutions in developing countries.
Prerequisite: CIVE 322 or ENVE 322 or WR 416.
Term Offered: Spring (odd years).
Grade Mode: Traditional.
Special Course Fee: No.

WR 511  Water Resource Development  Credits: 3 (3-0-0)
Course Description: Basic principles of water resource management including surface and subsurface flows.
Prerequisite: None.
Registration Information: Graduate standing. Offered as an online course only. Written consent of instructor.
Term Offered: Spring.
Grade Mode: Traditional.
Special Course Fee: No.

WR 516  Cumulative Effects and Watershed Analysis  Credits: 3 (2-0-1)
Course Description: Definition, causal processes, and modeling of cumulative watershed effects; comparison and evaluation of current watershed analysis procedures.
Prerequisites: WR 416 and WR 417.
Registration Information: Must register for lecture and recitation.
Term Offered: Spring (odd years).
Grade Mode: Traditional.
Special Course Fee: No.

WR 520  Evapotranspiration  Credits: 2 (2-0-0)
Course Description: Theory, estimation, measurement, simulation, and application of evapotranspiration processes in hydrology.
Prerequisite: PH 122.
Term Offered: Spring.
Grade Modes: S/U within Student Option, Trad within Student Option.
Special Course Fee: No.

WR 524  Modeling Watershed Hydrology  Credits: 3 (2-2-0)
Also Offered As: CIVE 524.
Course Description: Development and application of watershed models: structure, calibration, evaluation, sensitivity analysis, simulation.
Prerequisites: (CIVE 322 or ENVE 322 or WR 416) and (STAT 301 or STAT 315 or CIVE 202) and (MATH 141 or MATH 155 or MATH 160).
Registration Information: Must register for lecture and laboratory. Credit not allowed for both WR 524 and CIVE 524.
Term Offered: Spring (odd years).
Grade Mode: Traditional.
Special Course Fee: No.

WR 574  Advanced Snow Hydrology  Credits: 4 (3-0-1)
Course Description: Snow processes in hydrologic cycle; physical and conceptual methods of modeling; techniques for measuring different states and change rates.
Prerequisite: CIVE 322 or ENVE 322 or WR 416.
Registration Information: Must register for lecture and recitation.
Term Offered: Fall (even years).
Grade Mode: Traditional.
Special Course Fee: No.

WR 616  Hillslope Hydrology and Runoff Processes  Credits: 3 (1-0-2)
Course Description: Hillslope hydrology and runoff processes in different environments; implications for management and modeling.
Prerequisite: CIVE 322 or ENVE 322 or WR 416.
Restriction: Must be a: Graduate, Professional.
Registration Information: Must register for lecture and recitation.
Term Offered: Spring (even years).
Grade Mode: Traditional.
Special Course Fee: No.

WR 674  Data Issues in Hydrology  Credits: 3 (3-0-0)
Course Description: Types of data, data sources, data quality, missing data, spatial data, data usage, sensitivity in models, error, presentation of data and results.
Prerequisite: WR 574.
Restriction: Must be a: Graduate, Professional.
Term Offered: Spring (even years).
Grade Mode: Traditional.
Special Course Fee: No.

WR 692  Seminar  Credits: Var[1-18]
Course Description:
Prerequisite: None.
Restriction: Must be a: Graduate, Professional.
Terms Offered: Fall, Spring, Summer.
Grade Mode: Instructor Option.
Special Course Fee: No.
WR 695 Independent Study Credits: Var[1-18]
Course Description: 
Prerequisite: None.
Restriction: Must be a: Graduate, Professional.
Terms Offered: Fall, Spring, Summer.
Grade Mode: Instructor Option.
Special Course Fee: No.

WR 696 Group Study Credits: Var[1-18]
Course Description: 
Prerequisite: None.
Restriction: Must be a: Graduate, Professional.
Terms Offered: Fall, Spring, Summer.
Grade Mode: Instructor Option.
Special Course Fee: No.

WR 698 Research Credits: Var[1-18]
Course Description: 
Prerequisite: None.
Restriction: Must be a: Graduate, Professional.
Terms Offered: Fall, Spring, Summer.
Grade Mode: Instructor Option.
Special Course Fee: No.

WR 699 Thesis Credits: Var[1-18]
Course Description: 
Prerequisite: None.
Restriction: Must be a: Graduate, Professional.
Terms Offered: Fall, Spring, Summer.
Grade Mode: Instructor Option.
Special Course Fee: No.

WR 712 Watershed Systems Credits: 3 (2-2-0)
Course Description: Dynamic simulation of watershed behavior; application and evaluation of current hydrologic models.
Prerequisites: (WR 416 or CIVE 322 or ENVE 322) and (STAT 340).
Restriction: Must be a: Graduate, Professional.
Registration Information: Must register for lecture and laboratory.
Term Offered: Fall (even years).
Grade Mode: Traditional.
Special Course Fee: No.

WR 714 Water Quality for Wildland Managers Credits: 3 (3-0-0)
Course Description: Sampling, statistics of sampling, concepts of ionic equilibrium, water quality modeling, instream flow requirements.
Prerequisite: WR 418.
Restriction: Must be a: Graduate, Professional.
Term Offered: Fall (even years).
Grade Mode: Traditional.
Special Course Fee: No.

WR 798 Research Credits: Var[1-18]
Course Description: 
Prerequisite: None.
Restriction: Must be a: Graduate, Professional.
Terms Offered: Fall, Spring, Summer.
Grade Mode: Instructor Option.
Special Course Fee: No.

WR 799 Dissertation Credits: Var[1-18]
Course Description: 
Prerequisite: None.
Restriction: Must be a: Graduate, Professional.
Terms Offered: Fall, Spring, Summer.
Grade Mode: Instructor Option.
Special Course Fee: No.