

River Studies and Leadership Certificate

Accepted Courses

Core Courses

Geographic Information Systems Core Courses (choose ONE):

<u>CMU</u>	<u>Prescott College</u>	<u>SNC</u>	<u>U of U</u>	<u>WWU</u>
GEOL 332/332L - Intro to GIS (3 cr)	ENV21400 - Intro to GIS (4 cr)	ENVS 421/ENVS 425 Graphic Information Systems and lab (4 cr)	GEOG 3140 Introduction to GIS (4 cr)	ENVS 320 Introduction to Geographic Information Science (4 cr)
	ENV44720 - Environmental Problem Solving: A Spatial Approach (4 cr)		GEOG 3110 The Earth from Space – Remote Sensing of the Environment (3 cr)	ENVS 419 Applications in GIS (3 cr)
			GEOG 5140 – Methods in GIS (4 cr)	ESCI 442 Introduction to Remote Sensing (5 cr)

River Science (choose ONE):

<u>CMU</u>	<u>Prescott College</u>	<u>SNC</u>	<u>U of U</u>	<u>WWU</u>
GEOL 455/455L - River Dynamics (4 cr)	ENV40000 - River Ecology & Conservation (4 cr)	ESCI 301/305 Hydrology and Water Resources with lab	BIOL 3045: Landscape Ecology (3 cr)	ESCI 310 Environmental Systems (4 cr)
ENVS 433 - Restoration of Aquatic Systems (3 cr)	ENV 42XX – Hydrology (4 cr)		BIOL 3480/5430: Biography of and Urban Stream (3 cr)	ESCI 315 The Art, Science, and Ethics of Fly fishing (3 cr)
	ENV42724 - Restoration Ecology: Watersheds of the Southwest (4 cr)		CVEEN 4410: Engineering Hydrology (3 cr)	ESCI 410 Habitat and Ecology of Pacific Salmon and Trout (3 cr)
	ENV42750 - Wetland Ecology & Management (4 cr)		CVEEN 5610/6610: Water Chemistry and Laboratory Analysis (3 cr)	ESCI 411 Habitat Assessment of Pacific Salmon and Trout (2 cr)
	ENV44754 – Topics in Geomorphology (4 cr)		GEO 3300: The Water Planet (3 cr)	ESCI 429 Stream Ecology (5 cr)
				ESCI 431 Watershed Biogeochemistry (3 cr)
				ESCI 470 Ecological Restoration (5 cr)
				GEOL 472 Surface Water Hydrology (4 cr)

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River Policy (choose ONE):

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POLS 488 – Environmental Politics and Policy (3 cr)	ENV40000 - River Ecology & Conservation (4 cr)	BIOL 407 Conservation Biology	POLSS 5510: Water Policy and Politics (3 cr)	ENVS 426 Water Resources (4 cr)
	ENV42750 - Wetland Ecology & Management (4 cr)	ENVP 425 Environmental Law		ENVS 451 Natural Resource Policy (3 cr)
	ENV21550/ENV41550 - Water in the West (4 cr)	ENVP 423 Environmental Planning and Policy		ENVS 463 Native American Planning and Natural Resource Policy (3 cr)
	ENV42020 - Conservation Biology (4cr)			ESCI/ENVS 493 Environmental Impact Assessment (5 cr)
				ESCI 496 Integration of Environmental Science and Policy (3 cr)

Swiftwater Rescue Core Courses (choose ONE):

<u>CMU</u>	<u>Prescott College</u>	<u>SNC</u>	<u>U of U</u>	<u>WWU</u>
Level 4 American Canoe Association Swiftwater Rescue Course through CMU Outdoor Program (1 cr – KINA topics course)	AE2449/AE4449 - River Guides Training (4 cr)	PHED XXX Swiftwater Rescue (TBA)	H ED 4510: Swiftwater Rescue Techniques and Theory (3 cr)	PE 177 Basic Kayak (1 cr)

Emphasis Coursework (Choose ONE emphasis area)

River Science Emphasis Area Courses (choose TWO)

<u>CMU</u>	<u>Prescott</u>	<u>SNC</u>	<u>U of U</u>	<u>WWU</u>
GEOL 355 - Basic Hydrology (3 cr)	ENV42724 - Restoration Ecology: Watersheds of the Southwest (4 cr)	ESCI 280 Stream Ecology (1cr)	GEOG 2000: Utah’s Backyard: An Introduction to Field-Based Physical Geography (3 cr)	ESCI 315 The Art, Science, and Ethics of Fly fishing (3 cr)

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ENVS 331/331L - Water Quality (4 cr)	ENV40000 - River Ecology & Conservation (4 cr)	BIOL 421/425 Aquatic Ecology and lab (4cr)	GEOG 3200/5200: Geomorphology: Mountains, Rivers and Deserts (4 cr)	ESCI 316 Advanced Fly fishing: River Stewardship, Reflection, and Native Trout (2 cr)
BIOL 414/414L – Aquatic Biology (4 cr)	ENV 42XX – Hydrology (4 cr)	ESCI 320 Climate Change (3 cr)	GEOG 3290/5290: Water in Utah (3 cr)	ESCI 410 Habitat and Ecology of Pacific Salmon and Trout (3 cr)
GEOG 402/402L – Applications of Geomorphology (4 cr)	ENV42020 - Conservation Biology (4cr)	ESCI 301/305 Hydrology and Water Resources (4 cr)	GEOG 3350: Resource Conservation and Environmental Management (3 cr)	ESCI 411 Habitat Assessment of Pacific Salmon and Trout (2 cr)
BIOL 336 – Fish Biology (3 cr)	ADV25008 - In the Creeks & Canyons: Explorations of the Mogollon Rim (4 cr)	ENVS 360 Natural History of the Rogue River (3 cr)	GEO 5350/6350/7350: Groundwater (3 cr)	ESCI 429 Stream Ecology (5 cr)
	ENV44720 - Environmental Problem Solving: A Spatial Approach (4 cr)		GEO 5390/6390/7390: Solute Transport and Subsurface Remediation (3 cr)	ESCI 431 Watershed Biogeochemistry (3 cr)
			CVEEN 5410/6410: Watershed Modeling (3 cr)	ESCI 470 Ecological Restoration (5 cr)
				GEOG 472 Surface Water Hydrology (4 cr)

River-based Policy and Management Emphasis Area Courses (choose TWO courses):

<u>CMU</u>	<u>Prescott</u>	<u>SNC</u>	<u>U of U</u>	<u>WWU</u>
POLS 488 – Environmental Politics and Policy (3 cr)	ENV40000 - River Ecology & Conservation (4 cr)	ENVS 2XX Natural Resources Management (3 cr)	CMP 5350/6350: Public Lands and Environmental Policy (3cr)	ENVS 426 Water Resources (4 cr)
	ENV21550/ENV41550 – Water in the West (4 cr)	ENVS 4XX Natural Resource Economics (3 cr)	CPM 5360/6360: Environmental Planning Law and Policy (3 cr)	ENVS 450 Science in the Policy Process (4 cr)
	ENV42020 – Conservation Biology (4cr)	BIOL 407 Conservation Biology (3 cr)	Civil and Environmental Engineering 6480/Philosophy 5540: Hydrotopia (3 cr)	ENVS 451 Natural Resources Policy (3 cr)
	ENV24700/ENV44700 - Park & Wilderness Management (4 cr)	ENVP 425 Environmental Law (3 cr)		ENVS 454 Environmental Policy Analysis (4 cr)

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	ENV42750 - Wetland Ecology & Management (4 cr)	ENVP 423 Environmental Planning and Policy (3 cr)		ENVS 463 Native American Planning and Natural Resource Policy (3 cr)
				ESCI/ENVS 493 Environmental Impact Assessment (5 cr)
				ESCI 496 Integration of Environmental Science and Policy (3 cr)

River-based Recreation, Education, and Tourism Emphasis Area Courses (choose TWO courses):

<u>CMU</u>	<u>Prescott</u>	<u>SNC</u>	<u>U of U</u>	<u>WWU</u>
	Grand Canyon Wilderness Explorations & Landscape Studies, ADV21026 - Phase I: Expeditionary & Technical Skills for Rivers & Canyons (4 cr), ENV41027 - Phase II: Landscape Ecology (4 cr), ENV41028 - Phase III: Teaching and Research on Public Lands. Conservation and Management Challenges in Grand Canyon (4cr)	ODAL 301 Fundamentals of Environmental Interpretation	PRT 3050: Natural Resources Learning, Federal Lands: Wilderness Safety and Survival (3 credits)	ENVS 483 Environmental Interpretation (4 cr)
	ADV24050 - Environmental Perspectives & Whitewater Rafting (4 cr)	ODAL 380 River Expedition Rogue River	PRT4430: Environmental Interpretation and Communication (3 credits)	RECR 272 Introduction to Outdoor Recreation (3 cr)
	ADV21010 - Environmental Topics in Adventure Education (4 cr)	SUST 480 Special Topics; Geotourism (3 cr)	PRT 5180: Field Ecology in PRT (3 credits)	RECR 279 Introduction to Tourism (3 cr)
	AE2449/AE4449 - River Guides Training (4 cr)	PHED 2XX Whitewater Kayaking (1 or 2 cr)	PRT 5420 / 6420: Ecology and Management of Wildland Recreation Settings (3 credits)	RECR 370 Outdoor Program Development (4 cr)
	ADV 24200 – Canoeing: Introduction to Expeditionary Paddling (4 cr)		PRT 5430: Recreation Issues in Human Dimensions of Wildlife (3 credits)	RECR 379 Foundations of Ecotourism (4 cr)

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	ADV4235 – Expeditionary Rivers (4 cr)		PRTW 2020: Rivers and Community (4 credits)	RECR 470 Adventure-based Programming (3 cr)
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