

UW School of Aquatic and Fishery Sciences – Undergraduate Program

Minor in Freshwater Science and Management (FSM)

The SAFS Freshwater Science and Management Minor is designed for students majoring in other departments who wish to understand the complex relationships between freshwater ecosystems and human societies, including topics associated with global change, ecosystem services, fisheries, water pollution, land use, climate change, watershed and river basin management, water technology, environmental engineering, stakeholder processes, and water policy.

The FSM minor provides breadth to a degree and additional opportunities for employment or graduate careers. The program is especially appropriate for students majoring in Civil & Environmental Engineering, Marine Biology, Oceanography, Environmental Science & Terrestrial Resource Management, Biology, and Environmental Studies.

Enrollment in the Minor

The minor is open to all UW students who have reached 45 credits. Contact your departmental adviser to declare a minor in Freshwater Science and Management.

Recommended Courses

Please pay attention to prerequisites and recommended courses for each of these classes. Students will likely need preparatory coursework in biology, chemistry, physics, and pre-calculus.

Minor Requirements

The Freshwater Science and Management Minor requires a minimum of 27 credits, as follows:

NOTE: No more than 10 credits may overlap with student's major requirements; use this checklist to indicate whether a course is being used for the FSM minor, non-FSM major, or both.

☐ **All core courses (21cr):**

COURSE	CREDITS	FSM MINOR √	NON-FSM MAJOR √
FISH 200 (3 or 5)*		√	
FISH/ESRM 447 (5)		√	
CEE 478 (3)		√	
FISH 400 (3)		√	
And choose ONE of the following pairs:			
FISH/BIOL 473 & 474 (5)			
CEE 462 & 463 (5)			

☐ **Minimum of 2 approved electives, one from each category (≥ 6cr):**

A list of approved elective classes can be found on the following page.

PHYSICAL PROCESSES			
COURSE	CREDITS	FSM MINOR √	NON-FSM MAJOR √
BIOLOGICAL AND MANAGEMENT			
COURSE	CREDITS	FSM MINOR √	NON-FSM MAJOR √

☐ **Total Minor Credits** (minimum 27): _____ ☐ **Total Credits Overlapping with Major** (maximum 10): _____

☐ **Total Upper-Division (300–400 level) Credits** (minimum 15): _____

☐ **GPA Requirement: Minimum 2.00 cumulative GPA for UW courses used toward minor**

**Students who take only 3 credits of FISH 200 will need to take sufficient electives to reach 27 total credits in the minor*

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FSM Minor Requirements (min. 27 credits)

Course availability is subject to change without notice. SAFS cannot guarantee if/when courses from other departments will be offered. Please refer to relevant departmental websites/advisers for information about when specific courses may be scheduled.

<input type="checkbox"/> Core 6 courses	<ol style="list-style-type: none"> <input type="checkbox"/> FISH 200 (3 or 5)* Freshwater Ecology & Conservation (Win) <input type="checkbox"/> FISH/ESRM 447 (5) Watershed Ecology & Mgmt. (Spr) <i>Pre-req: BIOL 180, ESRM 201, or FISH 200</i> <input type="checkbox"/> CEE 478 (3) Water Systems Management & Operations <input type="checkbox"/> FISH 400 (3) Seminar in Freshwater Sustainability (Spr) 5. & 6. Choose one pair: <ul style="list-style-type: none"> <input type="checkbox"/> FISH/BIOL 473 (3) & FISH/BIOL 474 (2) Limnology & Lab (Aut) <i>Pre-req: BIOL 180</i> <input type="checkbox"/> CEE 462 (3) & CEE 463 (2) Applied Limnology & Pollutant Effects on Freshwater & Lab (Aut)
<input type="checkbox"/> Electives, Physical Processes 1 course	<p>Choose one:</p> <ul style="list-style-type: none"> <input type="checkbox"/> CEE 250 (3) Environmental Processes & Flows <i>Pre-req: MATH 120 or 124</i> <input type="checkbox"/> CEE 348 (4) Hydrology & Environ. Fluid Mechanics <i>Pre-req: CEE 347; PHYS 123 or PHYS 143</i> <input type="checkbox"/> CEE 357 (5) Environmental Engineering <i>Pre-req: CHEM 142, 143, or 145</i> <input type="checkbox"/> CEE 476 (3) Physical Hydrology <i>Pre-req: CEE 347</i> <input type="checkbox"/> CEE 477 (3) Open-Channel Flow <i>Pre-req: CEE 347</i> <input type="checkbox"/> ESS 326 (5) Geomorphology <i>Pre-req: PHYS 114 or 121</i> <input type="checkbox"/> ESS 426 (5) Fluvial Geomorphology <i>Pre-req: ESS 311 or 326</i> <input type="checkbox"/> ESS 454 (4) Hydrogeology <i>Pre-req: ESS 311 or 314</i> <input type="checkbox"/> ESS 457 (4) Environmental Geochemistry <i>Pre-req: ESS 316, CHEM 152, or CHEM 155</i> <input type="checkbox"/> ESRM 426 (4) Wildland Hydrology
<input type="checkbox"/> Electives, Biological and Management 1 course	<p>Choose one:</p> <ul style="list-style-type: none"> <input type="checkbox"/> FISH 423 (4) Aquatic Invasion Ecology (Aut) <i>Pre-req: BIOL 180 or 462</i> <input type="checkbox"/> FISH 428 (5) Stream & Watershed Restoration (Spr – odd years) <i>Pre-req: BIOL 356, ESRM 304, or FISH 312</i> <input type="checkbox"/> FISH 450 (3) Salmonid Behavior and Life History (Win)

Other elective courses may be approved by petition. Questions about the minor may be emailed to the SAFS Adviser at mcfm@uw.edu.

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