

## Phase 2/3 Elective Description

**Campus:** ALL (Bismarck)

**Department:** Emergency Medicine

**Elective/Experience Title:** Wilderness Medicine/Medical Education

**Course Number:** EMRG 9502

**Location of Elective:** Southwest Campus (Bismarck)

**Preceptor(s):** Jon Solberg, MD

**Course Prerequisites:** Intro to Emergency Medicine

**Period(s) Offered:** 10

**Revised Curriculum Phase(s):** 3

**Number of students per period:** 6

**Purpose:** Introduce graduating medical students to the principles of wilderness medicine in order to prepare them to serve in medical leadership roles for outdoor camps, expeditions, search and rescue teams, and ski patrols.

**Objectives:** Following successful completion of this elective, the student will be able to:

1. State the role of the NDHSSA or similar preparticipation physical exam forms in the screening of wilderness athletes.
2. Execute preparation of a basic and advanced wilderness first aid kit for small to large groups traveling in the back country.
3. Summarize the roles played by gradual ascent, pharmacology, and descent in the prevention and treatment of Acute Mountain Sickness, High-Altitude Cerebral Edema, and High-Altitude Pulmonary Edema.
4. Summarize the role of the gas laws in the physiology and pathophysiology of diving, and the treatment of illness and injury suffered by divers.
5. State the utility of rapid vs delayed rewarming in the field for frostbite, and the different methods of rewarming employed in treatment for varying degrees of hypothermia.
6. Summarize the role of sodium and water balance in the pathophysiology and treatment of heat related injuries, including exercise induced hyponatremia.
7. Demonstrate proper field treatment for wounds, including life threatening hemorrhage.
8. Demonstrate basic map reading skills and state how reading terrain can play a role in search and rescue.
9. Summarize the role played by the National Incident Command System in search and rescue and wildland firefighting.
10. Demonstrate mastery of course material by generating and executing a 1-day wilderness first aide community course.

**Instructional Activities:** During this elective, the student will be involved in/experience:

1. Complete the e-learning modules and pool sessions (with SCUBA One, Mandan ND) necessary to earn the Professional Association of Dive Instructors (PADI) - "Pool Diver Certification." (*\$450 fee to be incurred by student*). Students can complete (on their own) the open water session later in the summer to earn the PADI Open Water Diver certification.

2. Read and review the Wilderness Medical Society Clinical Practice Guidelines for Wilderness Emergency Care - 2019 version.
3. Earn the FEMA certificates IS-100 and IS-700 in National Incident Management System.
4. Read the textbook and earn the WLS: MP certification or serve as assistant instructor in UND Wild Med Weekend (Wilderness Life Support: Medical Professional).
5. Potential field trips: aviation medical office, Huff Hills Ski Patrol (Mandan, ND), ND Civil Air Patrol, ND Air National Guard/Army Reserve aviation units, Afton State Park Permanent Orienteering Course in Minneapolis, MN.
6. Case studies with faculty from Department of Emergency Medicine and faculty alumni of UND Wild Med Weekend.

**Criteria for Grading:** During and following this elective, the preceptor will:

1. Utilize the Wilderness Medicine elective evaluation form.
2. Evaluate by review of the student's completion of the "PADI Pool Diver Certification" the student's ability to meet *objective #4*. (If student is not medically able to complete the certification, this objective will be met by completion of the online portion and in-person observation of the pool sessions.)
3. By review of completed certificates of completion for IS100 and IS700 evaluate student's completion of *objective #9*.
4. By review of the student's attainment of WLS: MP certification card and at least an 80% score on written exam evaluate the student's completion of *objectives 1-7*.
5. By direct observation of the student's participation in delivery of a community wilderness first aid course evaluate the student's completion of *objectives 2, 5-8, 10*.
6. Observe completion of the Afton State Park Orienteering Course (or equivalent map reading/orienteering exercise) to evaluate student's completion of *objective #8*.

**Criteria for Honors:** The student will do the following in order to obtain honors:

1. Earn greater than or equal to 90% on WLS: MP final exam.
2. Be recommended for Honors by the preceptor completing the Wilderness Medicine elective evaluation form.