**Wilderness Rescue and Survival Skills**

**PTRM 356**

**5 credits**

**Field Residence Component**: January 30 –April 15, 2016

**Online Coursework Component**: January 2-27, 2016

**Program Overview**

Offered in the mountains of Costa Rica and the Blackfoot Valley of Montana, Aerie Backcountry Medicine’s Semester in Wilderness Medicine is designed for students with an interest in wilderness medicine, wilderness search and rescue, and risk management. Three integrated, 5-credit courses comprise the Semester: Emergency Medical Technician and Incident Management (ECP 332); Wilderness Medicine and Risk Management (PTRM 355); and Wilderness Rescue and Survival (PTRM 356).

Students successfully completing the Semester will earn the following certifications: National Registry Emergency Medical Technician, Wilderness Emergency Medical Technician, Swiftwater Rescue Technician, and Level 1 Avalanche. The goal of the Semester is to provide students with the training and credentials to live and work as outdoor professionals in challenging environments around the world.

**Course Overview**

This course is ideal for outdoor leaders involved in extended backcountry trips and those individuals seeking employment with search and rescue units, ski patrols and wilderness trip leading organizations, in particular those operating eco-tourism trips abroad. This course emphasizes skills as well as necessary background medical knowledge in wilderness rescue and survival. Students will be prepared to handle emergencies in high-elevation, winter conditions as well as in tropical and swiftwater environments. Students successfully completing the course will be awarded certifications in Swiftwater Rescue and Level I Avalanche. They will also be prepared for extended care of patients and rescuers in remote and challenging environments. Major course topics include the following:

* Navigation instruction and practical scenarios, including landform interpretation of maps and use of map rulers to determine lat/long and UTM coordinates, use of compass, and GPS training
* 3 days of Swiftwater Rescue training, taught by instructors from Whitewater Rescue Institute on the Savegre river in Costa Rica
* 3 days of Level I Avalanche taught by instructors from West Central Montana Avalanche Center at a backcountry yurt in the Swan Mountains
* Tropical survival skills training taught by a professional guide with Coast to Coast Adventures, an adventure travel company based in San Jose, Costa Rica
* Winter survival skills training on an overnight winter camping trip prior to arriving at the yurt for avalanche training

An overnight, winter rescue scenario in conjunction with Missoula County Search and Rescue, as well as training in rescue helicopter operations with St. Patrick Hospital’s LifeFlight medics, complete the suite of practical experiences.

**Evaluation of student course work**

Grading guidelines: Exams: 20%; Practical Skills: 60%; Judgment and Attitude: 20%.

Students take weekly written exams on material covered in lecture and reading. In addition, students take practical exams given one-on-one with instructors. A score of 70% is required to pass each written exam. 4 re-takes are allowed over the course of the Semester; however, re-take grades do not count toward the final average score. A grading rubric unique to each skill is used by instructors to evaluate practical skills.

**Course Texts**

*Wilderness Medical Society Practice Guidelines for Wilderness Emergency Care*, William Forgey, Editor

*Semester in Wilderness Medicine Reader*, Aerie Backcountry Medicine

*Swiftwater Rescue*, Whitewater Rescue Institute

*Fundamentals of Search and Rescue*,

National Association of Search and Rescue (NASAR)

**Instructors**

Fernando Giaccaglia, WEMT Basic

Trenton Harper, EMT Paramedic

David McEvoy, MS, EMT Paramedic

Ryan Berube, Advanced EMT

Gregory Moore, MD, FACEP

**Syllabus**

Classes meet 8 am to 5 pm, Monday through Friday with the exception of overnight scenarios during the avalanche and winter rescue portions of the program.

**Online Course Component:**

Students must attend two pre-program meetings via Skype and read several chapters for discussion

Week 1

Read Chapter 6 – Survival and Improvisation - in the NASAR text

 Week 2

Read Chapter 9 – The SAR “Ready Pack” and Personal Equipment - in the NASAR text

1st Pre-Program Meeting

* Required gear for the tropics, suggested gear for tropical survival
* Required gear for Montana portion of the Semester
* Gear for the ski/snowshoe trip into the yurts

Week 3

2nd Pre-Program Meeting

* Preparing for international travel

Week 4

Read Chapter 10 – Navigation – in the NASAR text

**Field Residence Component**

**Day 1**

Environmental Emergencies (heat stroke and dehydration)

Situational Awareness and mental map skills: intro to backcountry navigation

Practical exercise in route-finding

Day 2

Compass use – taking field bearings and map bearings

Visually estimating distance in the field, including pacing

Practical exercise in determining and following bearings

Day 3

Tropical Survival Skills: awareness of environmental hazards;

Water disinfection and purification

Costa Rica maps: unique national system

Reading topographic maps – contours, elevation, scale, distance and landforms

Practical exercises in map reading

**Day 4**

Review of latitude and longitude

How to describe location using easting and northing – Costa Rica kilometer grid system

 Use of kilometer grid readers

Describing location with lat/long system

 Use of lat/long rulers; issues with precision

Continue map reading exercises

Improvised shelters; fire building: tropical forest considerations

Practical exercise in shelter and fire building combined with medical scenarios

**Day 5**

GPS use: position format, map datum, entering and creating waypoints, using GoTo

Practical exercises in navigation with GPS combined with medical scenarios (MedWar style)

Continue map reading exercises

## **Days 6-8**

Map out route to Rafiki Lodge on the Savegre River for swiftwater course:

 Distance, route, elevation loss, gps coordinates,

Swiftwater Rescue Technician course with instructors from the Whitewater Rescue Institute

## **Day 9**

Intro to USGS topo maps

 1:24,000 scale

 UTM system

 TRS system in Montana

Identifying landforms in the field from topo maps

Triangulation exercise

Route finding on snowshoes: exploring terrain based on topo map routes

Using GoogleEarth to plan routes

**Day 10**

Intro to winter survival and camping exercise

Mapping out the route to the winter backcountry camp and yurts

 Safest route, avalanche paths, distance, elev gain

Food, water and fuel requirements for winter camping

 Pack food and some gear for transport on snowmobile

Winter rescue and survival

Building snow shelters

Day 11-13

Level I Avalanche course with Western Central Montana Avalanche Center

**Day 14**

Missoula County Search and Rescue: SAR principles and techniques

Critical Incident Debrief system

Overnight winter rescue

**Day 15**

Helicopter operations

Air Medical response