A. PURPOSE
This policy provides guidelines for Alvernia University personnel who work outdoors or in hot conditions. The intent is to establish proper safety procedures and practices for faculty and staff as well as to learn how to control the risk of heat-induced illness, train workers to protect themselves, recognize symptoms, and respond should a heat illness emergency occur.

B. GENERAL SAFETY
Heat illness is a serious medical condition when heat exposure exceeds the physiological capacity of the body to cool itself, resulting in an increase in the core body temperature. This increase in body temperature would result in a range of heat-related symptoms, from treatable heat cramps to heat stroke. Heat stroke can be fatal, especially if medical treatment is delayed.

To prevent heat illness, Alvernia University personnel should:
- Understand the environmental and personal risk factors for heat illness
- Take the necessary steps for preventing heat illness
- Be able to recognize the early signs/ symptoms of heat illness
- Know the University’s established emergency response procedures for heat illness

C. HEAT ILLNESS
1. RISK FACTORS
There are several risk factors that may contribute to heat illness:
   a. Personal Risk Factors
      i. Age, weight, and physical condition
      ii. Acclimated to working in the heat
      iii. Consumption of water, alcohol and caffeine
      iv. Use of medications that affect tolerance to heat
   b. Environmental Risk Factors
      i. Air temperature and/or Relative Humidity
      ii. Direct exposure to the sun or heat sources
      iii. Limited air movement
      iv. Physical exertion and duration
      v. Protective clothing and protective equipment worn by employees

2. IDENTIFYING HEAT ILLNESS
The variety of possible heat hazards are listed below in the order of their seriousness:
- Heat rash (prickly heat) - not dangerous, but definitely uncomfortable. Showers after work and a sprinkle of talcum are helpful.
- Heat stress - as indicated by such symptoms as extreme thirst, fatigue, dizziness, and even trouble seeing. Take a break in the shade and drink cool water or electrolyte beverages - never alcoholic beverages.
- Heat cramps - painful muscle spasms in arms, legs, or intestines, caused by losing salt as the result of sweating. Again, cool down and drink water or electrolyte beverages.
2. Heat exhaustion - may cause weakness, dizziness, headache, nausea, chills with clammy skin and profuse sweating. Have the victim rest in a cool spot with feet slightly elevated and drink cool water unless vomiting. If there's no improvement in a short time, get medical help.

3. Heatstroke - is the most serious, in fact, life-threatening, form of heat illness in which the cooling action of perspiration stops, the skin may be hot to the touch, and the victim may appear confused and show poor coordination. Call 911 immediately and move the victim to a cool place then continuously sponge with cold water and/or apply ice packs or cold soft-drink cans until medical help arrives.

3. PREVENTING HEAT ILLNESS:

There are ways to protect employees from heat illness:

- **Acclimatization**: The body needs a certain period of time to adjust to working in heat and humidity, especially when heavy physical exertion is required. Typically, people can adapt to significant increases in heat within 4 – 14 days of a progressively increasing workload. *NOTE: Acclimatization is especially important for new employees, those returning to work after a prolonged absence or recent illness, or for those recently moving from a cooler climate.*

- **Ventilation, air cooling, fans, shielding, and insulation** are the five major types of engineering controls that can be used to reduce heat stress in hot work environments. Heat reduction can also be achieved by using power assists and tools that reduce the physical demands placed on an individual.

- **Allow frequent breaks** (in a cool place out of the sun if possible).

- **Make sure cool water is available and drink frequently and plentifully. NIOSH recommends that employees working in hot environments drink one cup every 15 minutes (four cups per hour).**

- **Wear lightweight, light-colored, and loose-fitting clothes, plus a lightweight cotton hat.**

- **Limit exposure to the sun as much as possible by scheduling outdoor activities for mornings and evenings and try to stay in the shade if outside during midday.**

- **Avoid hot and heavy meals; instead, eat light foods at room temperature and choose small portions of fruits and vegetables (which contain a lot of fluids).**

- **Anyone who works in conditions that increase the risk of heat stress should work within sight of someone else. Each should monitor the other to ensure that nobody develops symptoms without someone knowing it. Effective means of communication should be provided for personnel to contact their supervisor and emergency services.**

4. **EMERGENCY RESPONSE**

If a heat illness medical emergency should occur, **call 911 immediately**. Tell the dispatcher that this is a heat-related emergency. Do not leave the victim unattended. Move the victim to a cool place then continuously sponge with cold water and/or apply ice packs to the armpits. If you can, also call Alvernia University’s Public Safety office at 610-796-8350 so that they can meet the ambulance.
D. SUN EXPOSURE

Anyone working outdoors is exposed to the sun’s ultraviolet (UV) rays, even on cloudy days. UV rays are a part of sunlight that is an invisible form of radiation. There are three types of UV rays. UVA is believed to damage connective tissue and increase the risk for developing skin cancer. UVB penetrates less deeply into the skin, but can still cause some types of skin cancer. Natural UVC is absorbed by the atmosphere and does not pose a risk.

1. SUNBURN:
   Sunburn is not immediately apparent. Symptoms usually start about 4 hours after sun exposure, worsen in 24–36 hours, and resolve in 3–5 days. They include red, tender and swollen skin, blistering, headache, fever, nausea, and fatigue. In addition to the skin, eyes can become sunburned. Sunburned eyes become red, dry, painful, and feel gritty. Chronic eye exposure can cause permanent damage, including blindness.

   First Aid:
   - Take aspirin, acetaminophen, or ibuprofen to relieve pain, headache, and fever.
   - Drink plenty of water to help replace fluid losses.
   - Comfort burns with cool baths or the gentle application of cool wet cloths.
   - Avoid further exposure until the burn has healed.
   - Use of a topical moisturizing cream, aloe, or a 1% hydrocortisone cream may provide additional relief.

   If blistering occurs:
   - Lightly bandage or cover the area with gauze to prevent infection.
   - Do not break blisters. (This slows healing and increases risk of infection.)
   - When the blisters break and the skin peels, dried skin fragments may be removed and an antiseptic ointment or hydrocortisone cream may be applied.

   Seek medical attention if any of the following occur:
   - Severe sunburns covering more than 15% of the body
   - Dehydration
   - High fever (>101°F)
   - Extreme pain that persists for longer than 48 hours

2. SKIN CANCER:
   Skin cancer is the most common form of cancer in the United States and the most common types include basal cell carcinoma, squamous cell carcinoma, and melanoma.

   Indicators of skin cancer may include:
   - Irregular borders on moles (ragged, notched, or blurred edges)
   - Moles that are not symmetrical (one half doesn’t match the other)
   - Colors that are not uniform throughout
   - Moles that are bigger than a pencil eraser
   - Itchy or painful moles
   - New moles
   - Sores that bleed and do not heal
   - Red patches or lumps
3. Ways to Protect Yourself:
   - Avoid prolonged exposure to the sun when possible.
   - Wear sunscreen with a minimum of SPF 15.
     - SPF refers to how long a person will be protected from a burn. (SPF 15 means a person can stay in the sun 15 times longer before burning.) SPF only refers to UVB protection.
     - To protect against UVA and UVB, look for products labeled as “Broad Spectrum” and containing: Mexoryl, Parsol 1789, titanium dioxide, zinc oxide, or avobenzone.
     - Sunscreen performance is affected by wind, humidity, perspiration, and proper application.
     - Throw away sunscreens after 1–2 years because they lose potency.
     - Apply liberally (minimum of 1 oz) at least 20 minutes before sun exposure.
     - Apply to ears, scalp, lips, neck, tops of feet, and backs of hands.
     - Reapply at least every 2 hours or more frequently if perspiring heavily.
     - Some sunscreens may lose their effectiveness when applied with insect repellents so you may need to reapply them more often.
   - Wear clothing with a tight weave or high-SPF clothing.
   - Wear wide-brimmed hats and sunglasses with UV protection and side panels.
   - Take breaks in shaded areas.

E. REFERENCES
1. Preventing Heat-Related Illness or Death of Outdoor Workers Publication No. 2013-143 Centers for Disease Control and Prevention / National Institute for Occupational Safety and Health (NIOSH)
2. Working in Hot Environments Publication No. 86-112 Centers for Disease Control and Prevention / National Institute for Occupational Safety and Health (NIOSH)
3. Protecting Yourself From Sun Exposure Publication No. 2010-116 Centers for Disease Control and Prevention / National Institute for Occupational Safety and Health (NIOSH)