

# 07\_Neurological, Brain & Spinal Injury Care and Treatment

Content Area: **Science**  
Course(s):  
Time Period: **Full Year**  
Length: **2-3 weeks**  
Status: **Published**

## General Overview, Course Description or Course Philosophy

This course covers introductory information as it relates to the evaluation of individuals who have either critical medical conditions or sustained acute injuries, and their subsequent pre-hospital treatment. Students are minimally expected to have the knowledge and skills to perform basic life support and elementary treatment to stabilize a patient for transport to a hospital but not be proficient in utilizing complex life sustaining equipment. Students are expected to know first aid, understand when more experienced or sophisticated help is needed, and to prioritize the need for care. They also must do no harm. The first aid provider is not expected to offer the same level of care as a licensed EMT. This course offers 3 Rutgers University credit with the passing of the final exam.

## OBJECTIVES, ESSENTIAL QUESTIONS, ENDURING UNDERSTANDINGS

- Concussion: temporary disturbance of brain activity caused by a blow to the head
- Contusion: A bruise that causes a hemorrhage beneath the skin but does not break the skin
- Coup-contrecoup: a blow to the head with injury occurring at the site of impact and on the opposite side of impact as the brain rebounds
- Battle Sign: a sign of a basilar skull fracture with discoloration behind the ears
- Paraplegia: paralysis from the waist downward
- Quadriplegia: paralysis of all four limbs

## CONTENT AREA STANDARDS

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SCI.HS-LS1-2	Develop and use a model to illustrate the hierarchical organization of interacting systems that provide specific functions within multicellular organisms.
VHEL.9-12.9.4.12.H.1	Demonstrate language arts knowledge and skills required to pursue the full range of postsecondary education and career opportunities.
VHEL.9-12.9.4.12.H.3	Demonstrate science knowledge and skills required to pursue the full range of postsecondary education and career opportunities.
VHEL.9-12.9.4.12.H.5	Select and employ appropriate reading and communication strategies to learn and use technical concepts and vocabulary in practice.
VHEL.9-12.9.4.12.H.44	Demonstrate an understanding of the roles and responsibilities of all members of the healthcare team, including their ability to promote the delivery of quality healthcare.
VHEL.9-12.9.4.12.H.62	Demonstrate knowledge of technical skills required for career pathways in this cluster, including occupational safety techniques, OSHA Standard Precautions, and safety procedures designed to protect clients, co-workers, and self.
VHEL.9-12.9.4.12.H.63	Demonstrate knowledge of technical skills required for career pathways in this cluster by obtaining related certificates, such as Cardiopulmonary Resuscitation (CPR) and First Aid.

## RELATED STANDARDS (Technology, 21st Century Life & Careers, ELA Companion Standards are Required)

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LA.RH.11-12.3	Evaluate various perspectives for actions or events; determine which explanation best accords with textual evidence, acknowledging where the text leaves matters uncertain.
LA.RH.11-12.4	Determine the meaning of words and phrases as they are used in a text, including analyzing how an author uses and refines the meaning of a key term over the course of a text (e.g., how Madison defines faction in Federalist No. 10).
LA.RH.11-12.8	Evaluate an author's claims, reasoning, and evidence by corroborating or challenging them with other sources.
LA.WHST.11-12.1.B	Develop claim(s) and counterclaims using sound reasoning and thoroughly, supplying the most relevant data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline appropriate form that anticipates the audience's knowledge level, concerns, values, and possible biases.
LA.WHST.11-12.1.E	Provide a concluding paragraph or section that supports the argument presented.
TECH.9.4.12.CI	Creativity and Innovation
TECH.9.4.12.CT	Critical Thinking and Problem-solving

## STUDENT LEARNING TARGETS

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### Declarative Knowledge

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Students will understand that:

- Describe the difference between compensated and decompensated shock.
- Describe how to generally care for shock.
- Describe the care for anaphylaxis.
- Describe the care for psychogenic shock.
- List and describe the three types of external bleeding.
- Describe how to care for external bleeding.
- Recognize the signs of internal bleeding.
- Describe how to care for and monitor victims of severe internal bleeding.
- Describe the care of minor internal bleeding (bruising).

### **Procedural Knowledge**

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Students will be able to:

- Demonstrate patient care for individuals in shock
- Demonstrate the care of a patient with anaphylaxis
- Identify the 3 types of external bleeds
- Identify signs and symptoms of internal bleeding
- Demonstrate treatment for various bleeding wounds.

### **EVIDENCE OF LEARNING**

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#### **Formative Assessments**

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- Worksheets
- Group activities

- Chapter review

## **Summative Assessments**

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- Benchmarks – departmental benchmark given at the end of MP1, MP2, and MP3 based on lab practices
- Alternative Assessments
  - Lab inquiries and investigations
  - Lab Practicals
  - Exploratory activities based on phenomenon
  - Gallery walks of student work
  - Creative Extension Projects
  - Build a model of a proposed solution
  - Let students design their own flashcards to test each other
  - Keynote presentations made by students on a topic
  - Portfolio
- Medical terminology review:
- Have students locate visual images of poison ivy, poison oak, poison sumac, and stinging nettle. Students should then label each image and write captions describing the effects of each plant on human skin.

## **RESOURCES (Instructional, Supplemental, Intervention Materials)**

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Textbook required by Rutgers University:

Advanced First Aid, CPR, and AED, Seventh Edition

Jones and Bartlett

ISBN-13: 978-1284105315

ISBN-10: 1284105318

- Nearpod

- Edpuzzle

## **INTERDISCIPLINARY CONNECTIONS**

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- Ethics
- Informal writing
- Data analysis

## **ACCOMMODATIONS & MODIFICATIONS FOR SUBGROUPS**

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See link to Accommodations & Modifications document in course folder.