Sports Medicine 12 Course 2021-2022

Course Synopsis: Sports Medicine is a senior level course for grades 11 and 12 which introduces students to the basics of sports training, sports injury prevention, and recovery protocols. The course content includes units on general fitness training principles, sports first aid, sports taping, anatomy and physiology of sport injuries, common regional injuries and treatment, injury prevention and rehabilitation, clinical application to school teams, concussion protocol, and introduction to sports medicine professions.

Rationale: Students committed to high performance, physical activity, and competitions in sports require extensive knowledge and understanding of the science that contributes to that performance. Such a course will help meet the increasing need for students to blend science with sport in order to become familiar with the prevention, care, treatment, and Principles of Fitness Training rehabilitation of athletic injuries.

Goals:

1. Students will refine specific skills to diagnose, treat and prevent sports-related injuries.
2. Students will further develop communication skills when dealing with injured athletes (asking appropriate questions and interpersonal skills).
3. Students will make connections to various sports medicine careers through their practical experiences.
4. Students will further develop core competencies as they gain experience in injury treatment and prevention.
5. Students will develop levels of empathy as they interact with athletes who have sustained an injury.

Sports Medicine will support and encourage students to help in prevention of injuries, observe procedures, and to explore career options in this field of study. Moreover, students will increase their knowledge of organizations and associations of various sports medicine professionals. In addition, students will learn and demonstrate basic injury treatment and taping procedures, design strength and conditioning program for one sport, and perform CPR and emergency first aid. Lastly, the course supports student learning through meaningful methods of inquiry, interpretation, demonstration, and presentation of a variety of skills on important topics.

Aboriginal Worldviews and Catholic Principles:

● Learning ultimately supports the well-being of the self, the family, the community, the land, the spirits, and the ancestors. This course highlights the need to keep the self well through prevention of injury and allows students to be part of a community through their practical experience. Students will join athletic teams and will complete practicum hours while responding to injuries and promoting prevention. ● Learning is holistic, reflexive, reflective, experiential, and relational (focused on connectedness, on reciprocal relationships, and a sense of place). This course allows students to see the need for balance in all aspects of life as well as allowing them to be reflective on their well-being. Students engage in experiential lessons on taping and rehab methods to treat a variety of injuries while completing their practicum hours. ● Learning involves recognizing the consequences of one's actions. This course focus not only on treatment but on prevention of injury.

● Learning is embedded in memory, history, and story. Students learn that learning is transferred down to other generations. Students learn that some of the strategies and techniques covered in this class have deep historical origins. ● Learning involves patience and time. Healing from injuries takes time, patience and understanding of the grief cycle. Students will come to appreciate this as they work with athletes who have sustained an injury. ● Learning requires exploration of one's identity. Students explore themselves and come to understand how their own choices may impact the degree of injury they might sustain and how to prevent it. ●Lastly, the course will also build on faithful relationships within the Catholic religion as it pertains to the science and sporting world as a community.

Course Name: Sports Medicine **Grade: 12**

BIG IDEAS

Sports medicine includes a variety of careers due to the broad nature of the field.	**Understanding the musculoskeletal system aids in understanding the nature of injury.**	**Proper nutrition and sports psychology play an important role in treatment and prevention of injury.**	**There are commonalities in injuries throughout the body.**	**There are a variety of treatment and rehab methods to address specific injuries.**

Learning Standards

Curricular Competencies	Content
Students are expected to do the following:	*Students are expected to know the following:*
● Explore and describe different sports medicine careers ● Demonstrate appropriate first aid and CPR methods when treating injuries, where appropriate ● Apply the concepts of different parts of the musculoskeletal system when treating various injuries. ● Identify and describe the relationships between healthy eating, overall health, and performance in fitness activities, personally and professionally ● Continuously monitor personal nutritional intake and physical activity as a means to reflect on overall health and well-being ● Utilize the knowledge of the grief stages of injury when treating injured athletes ● Apply proper techniques to prevent and treat common injuries and monitor the effectiveness of those techniques through a logbook or journal ● Apply appropriate communication strategies when communicating with a person who has sustained an injury ● Assess, manage, and apply protocols and techniques to aid in injury treatment	● Sports medicine careers ● First aid and taping ● Musculoskeletal systems ● Basic sports nutrition ● Sports psychology ● Injury prevention ● Concussion ● Common injuries ● Communication strategies ● Assessment and management strategies for common injuries ● Injury treatment and prevention

Big Ideas – Elaborations

● **Grief stages of injury** - denial, anger, depression, and acceptance
● **Communication strategies -** includes proper introductions, questions to determine nature of the injury, calming reassurance
● **Simulations-** includes role play scenarios with injured participant and athletic trainer, and may also relate to case studies

Curricular Competencies – Elaborations

● **Sports medicine careers** – Discussion of different requirements and schooling necessary in the fields of study which include: physiotherapy, chiropractics, massage therapy, acupuncture, athletic trainer, and other sports related careers may be explored.
● **Musculo-skeletal systems-** difference between axial and appendicular skeletons, functions of the skeleton, specific bones (naming and identification), three types of muscle (skeletal, cardiac, and smooth), specific skeletal muscles (naming, location, and identification), joints (knee, elbow, ankle, wrist); also includes anatomical terminology (anterior, posterior, medial and lateral) and directional movement terms (inversions, abduction, eversions), components of bones
● **Basic sports nutrition -** individual caloric intake needed based on physical activity, food groups and Canada Food Guide recommendations, importance of water intake (proper hydration levels, heat stroke), electrolyte balance
● **Sports psychology of injury-** injury setback and grief cycle, basics of performance psychology
● **Injury prevention** - strengthening and conditioning techniques of muscles, ligaments, and tendons to prevent injury, cryotherapy vs. thermal therapy, taping
● **Concussion-** diagnosis of concussion, return to play protocol, second impact syndrome
● **Common injuries-** lower leg and ankle, upper leg and knee, arm and hand, shoulder, head and spinal injuries, classification and identification includes contusion, laceration, fracture, dislocation, abrasion, acute vs chronic
● **Assessment and management strategies for common injuries** - diagnosis (SHARP), inflammation, symptoms of common injuries related to location on body
● **Injury treatment and prevention-** including PRICE, rehab exercises, taping/wrapping procedures

Content – Elaborations

Sports Psychology:

- To be able to define Sports Psychology
- To be able to describe the potential factors affecting performance
- To be able to describe 5 coping strategies
- To describe how relaxation techniques can affect performance
- To be able to recognize the benefits of Performance routines
- To demonstrate level of understanding of Sports Psychology

Anatomy and Physiology of Sports Injuries:

- Identify proper techniques for injury avoidance and sport preparation – pre and post sport participation activities as related to warm-up/cool down
- Identify and explain the role and importance of hydration, food energy, proper muscle preparation and sleep cycles in avoiding common physical activity discomfort –cramping, headaches, dizziness
- Identify anatomy related to common injuries – joints, muscular/skeletal system, nerves
- Describe characteristics of typical injuries in various regions of the body – shoulder separations,
- Rotator cuff injuries, dislocations, joint sprains, tendonitis,
- AC shoulder separations
- Anterior and posterior dislocations of the shoulder (glenohumeral joint)
- Tennis elbow/golfers' elbow
- Dislocation and fractures of fingers – avulsion fractures
- Jumper's knee and IT band syndrome
- Shin splints – anterior compartment syndrome
- Inversion and eversion sprains of the ankle
- Plantar fasciitis
- Achilles tendonitis
- Spine strains and sprains

Sports First Aid and Taping:

- Identify and control potentially hazardous sport situations
- Assess and apply appropriate injury protocols
- Identify and manage life-threatening situations

Content – Elaborations

- Develop a sports first-aid kit.
- Identify safety considerations relating to taping
- Demonstrate preventative and supportive techniques for ankle injuries.
- Demonstration regional taping techniques for ankle, foot, elbow, wrist, thumb, and finger
- Enact procedures for injury prevention minimizing possibility of further injury and maximizing the healing process

Concussion Protocols:

- Describe pathology of a concussion – including mechanisms of injury
- Identify the symptoms and characteristics of concussions
- Describe and explain the current grading systems for identifying concussion severity
- Identify and explain current concussion management protocols and return to play criteria

Sports Injury and Rehabilitation:

- Describe proper use of cryotherapy (use of heat and cold) for the management of pain and inflammation
- Demonstrate techniques for basic rehabilitation exercises
- Identify the purpose of basic rehabilitation exercises as they relate to reduction of inflammation, range of motion, strength building and joint stabilization
- Describe how the body reacts to injury
- Design a post-injury recovery training program based on injury rehab protocols for Unit 2 injuries

Sports Medicine Careers:

- Identify qualifications for careers in sports medicine – required credentials and post education/certification career opportunities
- Describe prerequisites and post-secondary requirements
- Identify Graduation Program standards for post-secondary application and acceptance at local, national, and international institutions

Recommended Instructional Components:

- Direct instruction- first aid and CPR training, review of musculoskeletal system as it relates to athletic movement and injuries
- Modeling- taping techniques, wrapping techniques, role play scenarios
- Videos- YouTube clips of various injuries (concussion, sport psychology) and treatment
- Games- Surgery Apps for content attainment and digital practice
- Group work with independent component- taping and wrapping techniques, injury treatment
- Individual- reading articles related to injury, prevention, nutrition or rehab, logbook or journal, reflections on experiences while working with a team and also on their job shadowing experience(s)
- Group discussion- think, pair, share of article readings

Recommended Assessment Components: Ensure alignment with the Principles of Quality Assessment

Summative Evidence collected	Formative Evidence collected	Curricular Competencies	Content	Success Criteria
Careers in the Sports Medicine Field Presentation- synthesizing Of research (present in 5 slides), and a chart that is completed while listening to other presentations	● research on different careers in the field	● Explore and describe different sports medicine careers	● sports medicine careers	● accurately represents a career including: education required, salary, setting, outlook, description of the actual job and any other interesting facts ● can listen respectfully as an audience member ● can accurately record relevant details about other careers
Constructions of models of different joints (elbow joint and knee joint)	● quizzes on anatomy ● worksheets ● anatomical terminology	● Identify and describe different parts of the musculoskeletal system and connect them to various	muscloskeletal system including joints, tendons, ligaments, insertion points, origins including	● correct identification and location of parts of the joints ● ability to identify movement of the joint

		injuries.	anatomical terminology	● using correct anatomical terminology
Unit test- Musculoskeletal systems includes: ● functions of the skeleton ● what is a tendon, ligament, joint ● three types of muscle ● anatomical terms ● labelling bones and muscles	● constructions ● worksheets ● diagram labelling ● dissections	● Identify and describe different parts of the musculoskeletal system and connect them to various injuries.	musculoskeletal system including components of bones, joints, tendons, ligaments, insertion points, origins including anatomical terminology	● correct identification and location of parts of the joints ● can correctly identify the three types of muscles ● is able to use correct anatomical terminology when describing a joint/tendon/ligament/ muscle ● can correctly explain the function of the skeleton and its associated muscles
	● Sports psychology and doping lesson ● grief stages of injury- personal reflections	● Explain the grief stages of injury and connect to, and reflect on, personal injury experiences	● sports psychology of injury	● can correctly identify the 4 stages of grief and make a personal connection to those stages ● understand how doping and sports psychology may impact risk of injury
	● basics of nutrition lessons (macro vs micro nutrients) ● factors to determine appropriate caloric intake (age, gender, level of activity)	● Identify and describe the relationships between healthy eating, overall health, and performance in fitness activities ● Monitor personal nutritional intake and physical activity	● basic sports nutrition	● can accurately record and calculate caloric intake ● can reflect in a meaningful way the connection between the Canada Food Guide recommendations and their personal diet

		as a means to reflect on overall health and well-being		
Unit test on the body's reaction to injury inflammation as a response Focus: Lower leg, ankle and foot, knee and upper leg Anatomy and three common injuries- signs, symptoms, treatment and rehab and prevention	● inflammation cartoon depicting what inflammation is ● diagrams-labelling and fill in the blanks for anatomy of lower leg, ankle and foot, knee and upper leg ● treatment options for lower and upper leg injuries ● Construction of the knee ● Practicing taping and wrapping procedures of two different body parts (timed) ● Communication	● Explain and apply proper techniques to prevent and treat common injuries ● Assess, manage, and apply protocols and techniques to aid in injury treatment ● Apply appropriate communication strategies when communicating with a person who has sustained an injury	● injury prevention ● common injuries ● assessment and management strategies for common injuries ● Injury treatment and prevention ● communication strategies	● Correctly identify the 3 stages of inflammation ● Can accurately describe SHARP and PRICE protocols ● Correctly identify bones, ligaments, joints and muscles of the lower leg ankle, and foot ● Accurately describe the steps for taping and wrapping an ankle
Unit test Focus: Shoulder, arm, wrist and hand, head (concussions) Anatomy and three common injuries- signs, symptoms, treatment	● construction of elbow joint ● practice taping wrist, thumb, and elbow and wrap shoulder ● anatomy- label diagrams ● injury research presentation ● concussions- protocols and second impact syndrome	● Explain and apply proper techniques to prevent and treat common injuries ● Assess, manage, and apply protocols and techniques to aid in injury treatment ● Apply appropriate communication strategies when communicating with a person who has sustained an injury	● injury prevention ● common injuries ● assessment and management strategies for common injuries ● injury treatment and prevention ● communication strategies	● Can accurately describe SHARP and PRICE protocols ● Correctly identify bones, ligaments, joints and muscles of the lower leg ankle, and foot ● Accurately describe the steps for taping wrist, thumb, and elbow and wrapping the shoulder

Injury research presentations	● upper and lower body anatomy and injuries ● research	● Explain and apply proper techniques to prevent and treat common injuries ● Assess, manage, and apply protocols and techniques to aid in injury treatment	● injury prevention ● common injuries ● assessment and management strategies for common injuries ● Injury treatment and prevention	● can accurately describe the anatomy ● can accurately identify the signs and symptoms of the injury ● can provide relevant treatment and rehabilitation options ● can provide various prevention techniques to prevent future injuries
Final assessment: 1. Taping and Wrapping procedures of two different body parts (timed) 2. Summative Final		Assessment includes: ● proper taping and wrapping techniques including effective communication ● sports psychology ● nutrition ● physiology and anatomy of injury identification and treatment ● concussion protocols and second impact syndrome		

Assessment and Evaluation:

Assignments	20%
Tests & Quizzes	20%
Projects & Labs	20%
Mid-term Exam	15 %
Final Exam	25%

You will need: Your Textbook(s)- refer to Learning Resources section

- 3 ring binder and loose-leaf paper pens - blue or black only pencil, eraser, ruler, pencil crayons, scissors, and glue

Classroom Expectations- There is no reason why every student should not meet the expectations as written in the "G" section of the "Work Ethic Indicators" found on this page.

**** Note:** Teacher reserves right to make alterations to outline as he sees fit. ****

Explanation of Work Ethic Indicators:

G

You arrive to class on time, prepared with all your supplies, notebooks, texts, and other related materials. All your work (home and in class) is completed to the best of your ability. You are making every effort to meet deadlines and due dates and are doing your best to keep your notebooks up-to-date and in good order. During class you are attentive and focused on the various tasks, assignments, and projects. You work well in individual and group situations, and you appear to be doing your best. You willingly participate and share ideas. You treat yourself, your peers and adults with the respect inherent in the Gospel values. You display good work habits and effort in all that you do.

S

Most of the time you arrive to class on time and are prepared with all your supplies, notebooks, texts, and other related materials. Most of your work (home and in class) is completed to the best of your ability. Although you occasionally miss handing in an assignment, you are making an honest effort to meet deadlines and due dates. You usually do your best to keep your notebooks up-to-date and in good order. During class you are attentive and focused on the various tasks, assignments, and projects with only occasional lapses. You work fairly well in individual and group situations and, on most occasions, appear to be doing your best. You are willing to participate and share ideas. You treat yourself, your peers, and adults with the respect inherent in the Gospel values. You display satisfactory work habits and effort most of the time.

N

You frequently arrive unprepared for class. You are sometimes missing supplies, notebooks, texts, and other related materials. On occasion, you are reluctant to put forth the effort to keep your materials and assignments organized. Homework and assignments are often incomplete or poorly done. During class, you are sometimes unfocused and easily distracted. You participate infrequently in class discussions. You sometimes treat yourself, peers, and adults with a lack of the respect inherent in the Gospel values. Your work habits need to improve.

Learning Resources: (this is not an exhaustive list)

1. PRICE method: https://www.youtube.com/watch?v=LNpwRAYMFxs
2. Common injuries:
a. https://www.youtube.com/watch?v=upxeWJs5Pio
b. groin pull: https://www.youtube.com/watch?v=VPDTdIctV9M
c. tennis elbow: https://www.youtube.com/watch?v=8B6H0qKJiSk
d. hamstring pull: https://www.youtube.com/watch?v=EPYQgwA15Aw
e. shin splints: https://www.youtube.com/watch?v=0lJmZtJv5kc
3. Sodexo education (series on nutrition) https://www.youtube.com/watch?v=r6EUPc-Faa8&list=PLHjvMn8GTsWzdRdAaCm4A982hfM24kC4c
4. TEDX Sports Psychology https://www.youtube.com/watch?v=jILkzPR-T5E
5. Ankle taping https://www.youtube.com/watch?v=0lyAtixAMGE
6. Musculoskeletal systems www.iInnerbody.com

Additional Resources:

- Keynote & PowerPoint presentation
- Pre-selected articles
- Film: TED TALKS & Sports Related
- CPR Dummies

Additional Information: