

# SAULT COLLEGE OF APPLIED ARTS AND TECHNOLOGY

SAULT STE. MARIE, ONTARIO



## COURSE OUTLINE

**COURSE TITLE:** Human Performance

**CODE NO. :** HDG 113

**SEMESTER:** 2

**PROGRAM:** General Arts and Science

**AUTHOR:** Anna Morrison

**DATE:** Jan. 2004

**PREVIOUS OUTLINE DATED:**

**APPROVED:**

\_\_\_\_\_  
DEAN

\_\_\_\_\_  
DATE

**TOTAL CREDITS:** 3

**PREREQUISITE(S):**

**HOURS/WEEK:** 3

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*For additional information, please contact the Dean,*

*School of Health and Human Services*

*(705) 759-2554, Ext. 603/689*

**I. COURSE DESCRIPTION:**

This course focuses on the study of human movement and of systems, factors, and principles involved in human movement. Students will learn about the effects of physical activity on health and performance. Principles of kinesiology, nutrition, anatomy, biomechanics and physiology related to exercise and human performance will be covered.

**II. LEARNING OUTCOMES AND ELEMENTS OF THE PERFORMANCE:**

Upon successful completion of this course, the student will demonstrate the ability to:

1. Describe the structure and function of the body and of physiological principles relating to human performance.

Potential Elements of the Performance:

1. Use correct anatomical terminology when describing the human body and performance
2. Describe the various parts of the skeletal and muscular systems and the ways in which they relate to human performance
3. Demonstrate an understanding of the organization and complexity of human anatomy
4. Describe the macro and micro structures of skeletal muscle
5. Describe muscle contraction and explain the sliding filament theory
6. Demonstrate an understanding of nerve-muscle interaction
7. Differentiate among types of muscle fibers
8. Describe group action of muscles
9. Discuss muscle's adaptation to strength training
10. Differentiate among the various types of muscle contractions
11. Describe the factors that influence strength development
12. Identify the components of strength
13. Discuss the relationships among the various components of strength
14. Use and understand the basic terminology of human metabolism related to exercise
15. Describe energy production
16. Understand the three energy systems
17. Explain the function of the cardiovascular and respiratory systems
18. Describe the acute and chronic effects of exercise of the cardiovascular and respiratory systems
19. Explain methods of testing the cardiovascular and respiratory system

2. Demonstrate an understanding of biomechanical principles related to improving movement  
Potential Elements of the Performance:
  1. Distinguish between qualitative and quantitative analyses as it relates to human movement
  2. Compare biomechanical models of human motion, types of motion and factors causing motion.
  3. Identify Newton's law of motion and describe practical illustrations of the laws
  4. Describe the expected path and motion of a projectile
  5. Describe the conservation of momentum within the body
  6. Explain the roll of friction in the context of fluid dynamics
3. Describe the common musculoskeletal injuries and identify the factors associated with injury management and prevention.  
Potential Elements of the Performance:
  1. Describe the biomechanical principles of injury
  2. Describe the phases of healing
  3. Identify common soft tissue injuries, dislocations, fractures, concussions and overuse injuries
  4. Describe the importance warming up and cooling down, using protect equipment, keeping fit, eating and resting to avoid injury
4. Demonstrate the effect of principles of training on human performance  
Potential Elements of the Performance:
  1. Identify and discuss the various components of physical fitness
  2. Evaluate the effect of various training methods on performance
  3. Examine fitness levels related to aerobic capacity, muscular strength, muscular power, muscular endurance, flexibility, and agility
5. Demonstrate an understanding of the ways in which nutrition affects human performance  
Potential Elements of the Performance:
  1. Describe the anatomy and physiology of the digestive system
  2. Identify the nutritional requirements and components of a healthy diet
  3. Explain the unique nutritional needs of various populations and outline the nutritional advice for Canadians
  4. Describe the relationship between nutrition and activity (e. caloric balance, nutrient balance, hydration)
  5. Discuss the differences between overweight and obese
  6. Explain the concept of energy balance
  7. Compare the effects of exercise and lifestyle modification, and dieting in maintaining a healthy weight
  8. Analyze eating disorders and the weight loss industry
  9. Explain the differences between drugs and dietary supplements
  10. Evaluate the effects of drugs and supplements on performance
  11. Describe various ergogenic aids
  12. Explain the impact of substance use and abuse of health status

6. Explain the relationship of mental state, growth and development, motor learning and skill acquisition on human performance

Potential Elements of the Performance:

1. Define the topic of sport psychology
2. Discuss the influence of personality on performance
3. Explain the relationship between anxiety and performance
4. Explain the importance of early exposure to physical activity
5. Explain the necessity of physical activity for optimal growth and development
6. Explain the concept of movement intelligence in motor skill development
7. Define motor skills and describe their characteristics
8. Explain the skill acquisition process

**III. TOPICS:**

1. Anatomy
2. Physiology and exercise physiology
3. Biomechanics
4. Sports Injuries, prevention and management
5. Principles of training and nutrition
6. Mental States, Motor skills, motor learning and Skill Acquisition

**IV. REQUIRED RESOURCES/TEXTS/MATERIALS:**

Klavora, Peter. *Foundation of Exercise Science*. University of Toronto. Sport Books Publisher, 2004

**V. EVALUATION PROCESS/GRADING SYSTEM:**

Assignments	30%
Tests	55%
Active Involvement in case studies	15%
	<hr/> 100%

The following semester grades will be assigned to students in post-secondary courses:

<u>Grade</u>	<u>Definition</u>	<u>Grade Point Equivalent</u>
A+	90 – 100%	4.00
A	80 – 89%	
B	70 - 79%	3.00
C	60 - 69%	2.00
D	50 – 59%	1.00
F (Fail)	49% and below	0.00
CR (Credit)	Credit for diploma requirements has been awarded.	
S	Satisfactory achievement in field /clinical placement or non-graded subject area.	
U	Unsatisfactory achievement in field/clinical placement or non-graded subject area.	
X	A temporary grade limited to situations with extenuating circumstances giving a student additional time to complete the requirements for a course.	
NR	Grade not reported to Registrar's office.	
W	Student has withdrawn from the course without academic penalty.	

**Note:** For such reasons as program certification or program articulation, certain courses require minimums of greater than 50% and/or have mandatory components to achieve a passing grade.

It is also important to note, that the minimum overall GPA required in order to graduate from a Sault College program remains 2.0.

## VI. SPECIAL NOTES:

### Special Needs:

If you are a student with special needs (e.g. physical limitations, visual impairments, hearing impairments, or learning disabilities), you are encouraged to discuss required accommodations with your professor and/or the Special Needs office. Visit Room E1101 or call Extension 703 so that support services can be arranged for you.

### Retention of Course Outlines:

It is the responsibility of the student to retain all course outlines for possible future use in acquiring advanced standing at other post-secondary institutions.

Plagiarism:

Students should refer to the definition of “academic dishonesty” in *Student Rights and Responsibilities*. Students who engage in “academic dishonesty” will receive an automatic failure for that submission and/or such other penalty, up to and including expulsion from the course/program, as may be decided by the professor/dean. In order to protect students from inadvertent plagiarism, to protect the copyright of the material referenced, and to credit the author of the material, it is the policy of the department to employ a documentation format for referencing source material.

Course Outline Amendments:

The professor reserves the right to change the information contained in this course outline depending on the needs of the learner and the availability of resources.

Substitute course information is available in the Registrar's office.

**VII. PRIOR LEARNING ASSESSMENT:**

Students who wish to apply for advanced credit in the course should consult the professor. Credit for prior learning will be given upon successful completion of a challenge exam or portfolio.

**VIII. DIRECT CREDIT TRANSFERS:**

Students who wish to apply for direct credit transfer (advanced standing) should obtain a direct credit transfer form from the Dean's secretary. Students will be required to provide a transcript and course outline related to the course in question.