



Republic of the Philippines

# Department of Education

DepEd Complex, Meralco Avenue, Pasig City

**STRENGTHENED SENIOR HIGH SCHOOL CURRICULUM**

## **HUMAN MOVEMENT 2**

**(MOTOR SKILLS DEVELOPMENT)**

**Grade 11**

**Course Description:**

This course covers the fundamentals of motor skills development and their application in optimizing human movement. Learners will explore the classifications of motor skills, examine the stages of motor learning and motor control theories to understand their relevance in fitness and exercise. Through practical activities, learners will apply these concepts to enhance functional movement patterns and performance.

**Elective:** Academic

**Prerequisite:** None

**Time Allotment:** 80 hours for one semester, 4 hours per week

**Schedule:** Second Semester

**QUARTER 1**

<b>CONTENT STANDARD</b>	The learners demonstrate understanding of the fundamentals of motor skills development to optimize human movement.							
<b>PERFORMANCE STANDARD</b>	The learners execute basic functional movement patterns using different motor control theories.							
<b>LEARNING COMPETENCIES</b>		<b>CONTENT</b>						
1. explain the different classifications of motor skills to optimize performance		Classifications of Motor Skills <ul style="list-style-type: none"> <li>● Gross Motor Skills vs. Fine Motor Skills</li> <li>● Discreet vs. Serial vs. Continuous Motor Skills</li> <li>● Open vs. Close Skills</li> </ul>						
2. describe motor learning factors in relation to motor learning stages in fitness and exercise		<table border="1"> <thead> <tr> <th>Motor Learning Stages</th> <th>Factors Affecting Motor Learning</th> </tr> </thead> <tbody> <tr> <td> <ul style="list-style-type: none"> <li>● Stage 1: The Cognitive Stage</li> </ul> </td> <td rowspan="2"> <ul style="list-style-type: none"> <li>● Practice</li> <li>● Feedback</li> <li>● Attention</li> </ul> </td> </tr> <tr> <td> <ul style="list-style-type: none"> <li>● Stage 2: The Associative Stage</li> </ul> </td> </tr> </tbody> </table>	Motor Learning Stages	Factors Affecting Motor Learning	<ul style="list-style-type: none"> <li>● Stage 1: The Cognitive Stage</li> </ul>	<ul style="list-style-type: none"> <li>● Practice</li> <li>● Feedback</li> <li>● Attention</li> </ul>	<ul style="list-style-type: none"> <li>● Stage 2: The Associative Stage</li> </ul>	
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<ul style="list-style-type: none"> <li>● Stage 2: The Associative Stage</li> </ul>								

	<ul style="list-style-type: none"> <li>• Stage 3: The Autonomous Stage</li> </ul>	<ul style="list-style-type: none"> <li>• Teaching strategies</li> <li>• Cognitive stimulation</li> <li>• Social factor</li> <li>• Individual factors</li> <li>• Age</li> </ul>
3. apply motor control theories in relation to fitness and exercise	The Motor Control Theories <ul style="list-style-type: none"> <li>• Open and Close Loop Control System</li> <li>• Reflex Theory</li> <li>• Dynamical Systems Theory</li> <li>• Motor Programs</li> <li>• Hierarchical Theory</li> </ul>	

## QUARTER 2

<b>CONTENT STANDARD</b>	The learners analyze basic functional movement patterns and application of measurement techniques to optimize performance.	
<b>PERFORMANCE STANDARD</b>	The learners evaluate basic functional movement patterns using current trends to enhance performance.	
<b>LEARNING COMPETENCIES</b>		
1. analyze movement patterns using measurement techniques to enhance performance	<b>CONTENT</b>	
	Measuring and Analyzing Human Movement	
	<b>Suggested Activities</b>	<b>Methods of Analysis</b>
	Movement Screen <i>(Suggested movement screen Deep Squat, Hurdle Step, In-line Lunge, Active Straight-leg Raise, Trunk Stability Push-up, Rotary Stability, and Shoulder Mobility)</i>  Basic Movement Patterns Push and Pull	<ul style="list-style-type: none"> <li>• Qualitative Techniques Using Video Analysis</li> <li>• Quantitative Techniques using free software applications (e.g. Kinovea, PhysioU Gait App, OpenCap, Dartfish, Functional Movement Test)</li> </ul>

	<ul style="list-style-type: none"> <li>• <i>Vertical</i></li> <li>• <i>Horizontal</i></li> <li>• <i>Diagonal</i></li> </ul> <p>Rotational</p>	<p>(FMT) app, Symmio Self-Screen app, etc)</p> <ul style="list-style-type: none"> <li>• Software Application in Movement Assessment</li> </ul>
2. assess current trends in movement assessment to optimize performance	Current Trends in Movement Assessment	

## GLOSSARY

***Adaptive movement*** It involves modifying motor responses based on environmental changes or sensory feedback to achieve a desired goal. This theory explains how the nervous system dynamically adjusts movements in response to external stimuli or changes in task demands.

***Associative Stage*** In this stage, movements become more fluid, reliable, and efficient. The learner is making movement adjustments and stringing together small movement skills.

***Automatic Movement Theory*** It explores the neural and functional basis for movements performed without conscious thought. These movements are often habitual, repetitive, or learned through extensive practice. The theory emphasizes how the nervous system enables the execution of these actions efficiently, using minimal cognitive effort.

***Autonomous Stage*** It is the final stage, where movements are accurate, consistent, and efficient. The learner is able to perform the movement with little or no cognitive processing

***Cognitive Stage Theory*** It is the first stage, where movements are slow, inconsistent, and inefficient. The learner is processing information to understand the requirements of the movement.

<b>Current</b>	It means happening, being used, or being done at present. Trends related to movement encompass advancements in technology, methodology, and applications in the fields of physical performance, rehabilitation, and sports science.
<b>Fine Motor Skills</b>	It refers to physical skills that involve small muscles and hand-eye coordination. Movements are more controlled and precise and often a well-developed pincer grip is needed.
<b>Functional Movement Patterns</b>	It refers to fundamental movements that form the basis of daily activities and physical tasks, such as squatting, lunging, pushing, pulling, and bending. These patterns are essential for maintaining balance, stability, and mobility while performing various tasks. Assessing these patterns helps identify potential weaknesses, imbalances, or inefficient biomechanics that could lead to injuries or reduced performance.
<b>Functional Movement Screen (FMS)</b>	It evaluates an individual's ability to perform seven fundamental movements, such as the deep squat and inline lunge. These tests highlight areas requiring improvement in mobility, stability, or motor control, enabling targeted interventions through corrective exercises. This approach is critical for athletes, rehabilitation, and anyone seeking to enhance functional fitness.
<b>Human Movement</b>	It is the movement produced by the human body due to the contraction of muscles and bending of bone joints. Human movements are controlled by the nervous system. Hence, the human movement incorporates the use of muscles, ligaments, joints, and bones. Kinesiology is the field that deals with the study of human movements.
<b>Human Movement Analysis</b>	It is the study of human motion through the use of various techniques such as biomechanics, kinesiology, and motion capture technology. A method of analysis refers to the systematic approach used to study, interpret, and evaluate a subject, phenomenon, or process.
<b>Human Movement System</b>	It is a system of physiological organ systems that interact. to produce movement of the body and its parts.
<b>Human Physiology</b>	It studies the “nature” of the human body, nature in the sense of how structures at different levels work. Physiology focuses on function, or how structures at different levels work.
<b>Motor Control</b>	It is a complex process involving the coordinated contraction of muscles due to the transmission of impulses sent from the motor cortex to its motor units. It is the process of initiating, directing, and grading purposeful voluntary movement.

<b>Motor learning</b>	It is the brain's way of committing automatic reaction to memory by practicing a skill or action over and over until it's ingrained in the brain and central nervous system. The repetition of motor learning enables people to more or less permanently change their brains so they can automatically react in a given situation without having to think on a conscious level.
<b>Movement Assessment</b>	It evaluates a person's ability to perform functional movements, often focusing on mobility, stability, strength, coordination, and overall movement patterns. It is used in various fields, such as physical therapy, sports science, and fitness training, to identify movement deficiencies, imbalances, or risks of injury.
<b>Nervous System</b>	It is the Initiation and regulation of vital body functions, sensation and body movements.
<b>Qualitative Analysis observation of movement</b>	It is to identify inefficiencies. Example Coaching via video replay (e.g., Kinovea). Assesses the technical quality of the movement (e.g., rhythm, posture), whereas quantitative techniques assess the movement using numbers (e.g., angles, distance, speed, force)
<b>Quantitative Analysis measurement of movement data</b>	It is like speed and joint angles. Example: Rehabilitation and training optimization using software like Kinovea.
<b>Reflex Theory</b>	It states that an individual's reflexes in response to stimuli determine its movements. Complex movements and behaviors form when reflexes combine. Sensory input is vital to this model since it drives reflexes
<b>Software Application</b>	It refers to a program or set of programs designed to perform specific tasks for users. In the context of human movement analysis, software applications are tools like Kinovea.
<b>Stability</b>	It is the ability of the body to maintain postural equilibrium and support joints during movement.
<b>Torso</b>	It is the main part of the body that contains the chest, abdomen, pelvis, and back. Most of the body's organs and the backbone are found in the torso. It is also called trunk.
<b>Video Analysis</b>	It is a technology that assists the coach in observing an athlete's techniques and providing feedback.

**Voluntary movement**

It refers to intentional and goal-directed actions initiated and controlled by the higher centers of the brain, particularly the motor cortex, basal ganglia, and cerebellum. This theory explains how the brain plans, initiates, and executes purposeful actions, such as picking up an object or writing.

**REFERENCES**

Study Rocket. (2023, November 24). Planes and Axes of Movement – GCSE Physical Education Edexcel Revision – Study Rocket. *Study Rocket*. <https://studyrocket.co.uk/revision/gcse-physical-education-edexcel/short-course/planes-and-axes-of-movement#:~:text=%E2%80%9CPlanes%20and%20axes%20of%20movement%E2%80%9D%20refers%20to%20the,divides%20the%20body%20into%20left%20and%20right%20halves.>

BPT, U. T. (2024, June 24). *Human Anatomy Terminology*. Muscle&Motion - Strength Training Anatomy, Muscular Anatomy and More!<https://www.muscleandmotion.com/human-anatomyterminology/#:~:text=Directional%20terms%20describe%20the%20positions%20of%20structures%20relative,a%20left%2C%20there%20must%20also%20be%20a%20right.>

*Gross and fine motor skills*. (n.d.). Early Movers. <https://www.earlymovers.org.uk/motor-skills>

*Motor Control & Motor Learning* -. (2018, April 26). <https://exercise.trekeeducation.org/motor-learning/>

Latash, M. L., Levin, M. F., Scholz, J. P., &Schöner, G. (2010). *Motor Control Theories and Their Applications*. <https://pmc.ncbi.nlm.nih.gov/articles/PMC3017756/>

On the Normal Use of Reflexes: The hypothesis that reflexes form the basic language of the motor program permits simple, flexible specifications of voluntary movements and allows fruitful speculation on JSTOR. (n.d.). *www.jstor.org*. <https://www.jstor.org/stable/27843368>

*Contemporary issues and theories of motor control, motor learning, and neuroplasticity*. (2015, April 9). Clinical Gate. <https://clinicalgate.com/contemporary-issues-and-theories-of-motor-control-motor-learning-and-neuroplasticity/>

*Contemporary issues and theories of motor control, motor learning, and neuroplasticity*. (2015b, April 9). Clinical Gate. <https://shorturl.at/ukV46>

Emmert, W., AT-Ret. ., CSCS, FMS-2., Olmsted Medical Center, & Functional Movement Systems. (2010). *Functional Movement Screen*. [https://www.acsm.org/docs/default-source/regional-chapter-individual-folders/northland/nacsm--wes-e--fms9a9b0c1f5032400f990d8b57689b0158.pdf?sfvrsn=3668bbe0\\_0](https://www.acsm.org/docs/default-source/regional-chapter-individual-folders/northland/nacsm--wes-e--fms9a9b0c1f5032400f990d8b57689b0158.pdf?sfvrsn=3668bbe0_0)

*Human Movement*. (2021, October 22). Bartleby. <https://www.bartleby.com/subject/science/biology/concepts/human-movement>

Sahrmann, S., PhD. (n.d.). The Human Movement System: Our Professional Identity. *Program in Physical Therapy*. [https://www.utc.edu/sites/default/files/2020-12/annualforum\\_2017\\_by\\_sahrmann\\_012617.pdf](https://www.utc.edu/sites/default/files/2020-12/annualforum_2017_by_sahrmann_012617.pdf)

Instructor, M. M. a. D. N. C. P. M. (n.d.). *Mobility and Stability: Joint Functions When We Move*. <https://blog.nasm.org/certified-personal-trainer/mobility-and-stability-joint-functions-when-we-move#:~:text=Stability%3A%20The%20ability%20of%20the,each%20has%20a%20primary%20function.>

Evans, W. J., & Lambert, C. P. (2007). Physiological Basis of Fatigue. *American Journal of Physical Medicine & Rehabilitation*, 86(1), S29–S46. <https://doi.org/10.1097/phm.0b013e31802ba53c>

*Energy System - Open Risk Manual*. (n.d.). [https://www.openriskmanual.org/wiki/Energy\\_System](https://www.openriskmanual.org/wiki/Energy_System)

*World Rugby Passport - Growth, maturation and development*. (n.d.). <https://passport.world.rugby/conditioning-for-rugby/introduction-to-conditioning-children/long-term-athlete-development/growth-maturation-and-development/>

*Human Movement*. (2021, October 22). Bartleby. <https://www.bartleby.com/subject/science/biology/concepts/human-movement>