

Course Description Form

1. Course Name	
Biomechanics Stage 2	
2. Course Code	
SESS26F2041	
3. Semester/Year	
2025-2026	
4. Date of preparation of this description	
February/ 2026	
5. Available Attendance Forms	
In-person/theoretical	
6. Number of credit hours (total) / number of units (total)	
2 hours per week / 4units	
7. Course administrator's name (if more than one name is mentioned)	
Assistant Professor Dr. Nawaf Awaid Abood, dr.nawaf.a@uomosul.edu.iq	
8. Course Objectives	
Course Objectives	A- Cognitive Objectives 1- By the end of the course, students should be able to define (biomechanical, kinematic, kinetic, and static variables). 2- By the end of the course, students should be able to understand the general laws and physical laws commonly used in sports. 3- By the end of the course, students should be able to develop mental qualities and abilities, enhancing concentration and developing the ability to think and observe. B- Course Skill Objectives 1- By the end of the course, students should be able to identify the biomechanical variables for a given skill. 2- By the end of the course, students should be able to identify the positions and stages of any sporting activity. 3- By the end of the course, students should be able to use physical laws in sports, according to the skill studied. 4- By the end of the course, students should be able to extract the center of gravity of the body according to the graph for a given skill. 5- By the end of the course, students will be able to analyze the kinematics of sports movements. C- Affective and Value-Based Objectives 1- The course should foster a spirit of challenge. 2- The course should foster a spirit of courage.

	3- The course should foster self-confidence. 4- The course should foster a spirit of altruism. D- General and Transferable Skills (other skills related to employability and personal development) 1- Safety and Security Skills 2- Assistance Skills 3- First Aid 4- Injury Rehabilitation
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9. Teaching and learning strategies

Strategy	Teaching Methods;	Learning Methods:
	1- Lecture Method	1- Partial Method
	2- Advanced Lecture Method	2- Holistic Method
	3- Blended Learning Method	3- Trial and Error Method
	4- E-Learning Method	4- Learning to Empower Method

10. Course Structure

Evaluation method	Learning method	Unit or subject name	Required Learning Outcomes	Hours	The week
Group evaluation	Lecture	Chapter One / Biomechanics	General Introduction	2 hours	1
Group evaluation	Lecture	Chapter One / Biomechanics	Chapter One: The Concept of Biomechanics / Sections of Biomechanics	2 hours	2
Group evaluation	Lecture	Chapter One / Biomechanics	The relationship of biomechanics to other sciences	2 hours	3
Individual assessment	Lecture	Chapter One / Biomechanics	Chapter Two: Basic Movements in the Human Body / Axes and Planes	2 hours	4
Group evaluation	Advanced Lecture	Chapter One / Biomechanics	Relativity of motion and the coordinate system	2 hours	5
Individual assessment	Blended learning	Chapter One / Biomechanics	Chapter Three: The Concept of Kinematics / Its Divisions (Linear and Angular)	2 hours	6
First semester theoretical exam / 1				2 hours	7
Group evaluation	Advanced Lecture	Chapter One / Biomechanics	Distance and Displacement / Scalar and Vector Quantities	2 hours	8

Group evaluation	Advanced Lecture	Chapter One / Biomechanics	Types of motion/speed	2 hours	9
Individual assessment	Blended learning	Chapter One / Biomechanics	Acceleration	2 hours	10
Group evaluation	Advanced Lecture	Chapter One / Biomechanics	Projectile motion	2 hours	11
Group evaluation	Advanced Lecture	Chapter One / Biomechanics	Chapter Four: Angular Kinematics / Angular Distance and Angular Displacement	2 hours	12
Group evaluation	Blended learning	Chapter One / Biomechanics	Circumferential velocity and angular velocity	2 hours	13
Individual assessment	Blended learning	Chapter One / Biomechanics	Angular Acceleration Mathematical problems about speed and angular acceleration	2 hours	14
First semester theoretical exam / 2				2 hours	15
Mid-year holiday					
Group evaluation	Lecture	Chapter Two / Biomechanics	Chapter Five: Newton's Laws	2 hours	16
Group evaluation	Advanced Lecture	Chapter Two / Biomechanics	Weight and mass	2 hours	17
Group evaluation	Advanced Lecture	Chapter Two / Biomechanics	Impulse and momentum	2 hours	18
Group evaluation	Advanced Lecture	Chapter Two / Biomechanics	Friction	2 hours	19
Group evaluation	Advanced Lecture	Chapter Two / Biomechanics	Work, power, and energy	2 hours	20
Individual assessment	Advanced Lecture	Chapter Two / Biomechanics	power	2 hours	21
Individual assessment	Lecture	Chapter Two / Biomechanics	Centrifugal force and centripetal force	2 hours	22
Individual assessment	Blended learning	Chapter Two / Biomechanics	collision / pressure	2 hours	23
Theoretical exam, second semester / 1				2 hours	24
Individual assessment	Blended learning	Chapter Two / Biomechanics	Chapter Six: Angular Kinetics	2 hours	25
Individual Assessment	Blended learning	Chapter Two / Biomechanics	Centers of gravity/stability	2 hours	26
Group evaluation	Lecture	Chapter Two / Biomechanics	moment of inertia Angular momentum / Angular energy	2 hours	27

Individual Assessment	Lecture	Chapter Two / Biomechanics	Extracting the body's centers of gravity Chapter Seven: Quantitative and Qualitative Analysis of Movement	2 hours	28
Second semester theoretical exam					29
Group evaluation	Lecture	Chapter Two / Biomechanics	How to calculate mechanical variables	2 hours	30

11. Course Evaluation

The grade is distributed as follows:

1. First semester exam, worth 25% of the grade.
2. Second semester exam, worth 25% of the grade.

Final year exam, worth 50% of the grade.

12. Learning and Teaching Resources

Required textbooks (methodology, if any)	There is a specific curriculum book (a curriculum for all public and private universities)
Key references (sources)	Sports Biomechanics / Professor Dr. Samir Muslat Al-Hashemi
Recommended supporting books and references (scientific journals, reports...)	Research Groups - Workshops - Lectures
Electronic references, websites	

Name and signature of the course holder:

Assistant Professor Dr. Nawaf Awaid Abood



Name and signature of the head of the department or branch

Prof. Dr. Nawfal Fadel Rashid