

## Course Description Form

1. Course Name:	
Biomechanics	
2. Course Code:	
3. Semester / Year:	
Semester	
4. Description Preparation Date:	
2025-03-19	
5. Available Attendance Forms:	
presence in the classroom	
6. Number of Credit Hours (Total) / Number of Units (Total)	
60 Hours / 3 Units	
7. Course administrator's name (mention all, if more than one name)	
Name: Saad M. Sarhan Email: saad.mah@uowa.edu.iq	
8. Course Objectives	
<b>Course Objectives</b>	Biomechanics look into the utilization of mechanical principles in order to improve an individual's athleticism. This can be done by enhancing the equipment they use and modifying the implementation of the training in aid of an individual reaching their goals. Rehabilitation and Prevention of Injury.
9. Teaching and Learning Strategies	
<b>Strategy</b>	<ol style="list-style-type: none"> <li>1. <b>Foundation Building:</b> Start by building a strong foundation in relevant fields such as anatomy, physiology, physics, and mathematics. Understanding the structure and function of the human body, as well as fundamental mechanical concepts like force, torque, and motion, is essential for comprehending biomechanical principles.</li> <li>2. <b>Conceptual Understanding:</b> Focus on developing a deep conceptual understanding of biomechanical principles rather than rote memorization. This involves grasping concepts such as Newton's laws of motion, levers, joint mechanics, muscle physiology, and tissue mechanics, and understanding how they apply to the human body.</li> <li>3. <b>Practical Application:</b> Apply theoretical knowledge to practical scenarios by solving problems and analyzing real-world biomechanical phenomena. Work on case studies, laboratory experiments, and practical projects to gain hands-on experience and reinforce understanding.</li> <li>4. <b>Utilize Resources:</b> Make use of textbooks, academic journals, online resources, and multimedia materials to access a wide range of information and perspectives in biomechanics. Attend lectures, seminars, workshops, and conferences to stay updated on the latest research and developments in the field.</li> </ol>
10. Course Structure	

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1 +2+3	4	Explaining the shoulder joint of the human body and its difference from the rest of the joints, muscles and bones that make up the joint	Structure of Shoulder	Lectures presented PDF format	Daily exams + homework assignments + monthly exams
4+5+6	4	Explaining the upper limbs of the human body and their difference from the lower limbs, and the muscles, joints, and bones that make up each limb	Biomechanics of Human upper extremity	Lectures presented in PDF format	Daily exams homework assignments monthly exams
6+7	4	Explaining the lower limbs of the human body and their difference from the upper limbs and the muscles, joints, and bones that make up each limb	Biomechanics of Human lower extremity	Lectures presented in PDF format	Daily exams homework assignments monthly exams
8+9	4	Explaining and analyzing the linear motion of the human body	Linear Kinematics of Human movement	Lectures presented in PDF format	Daily exams homework assignments monthly exams
10 +11	4	Explanation of projectile motion analysis	Kinematics of Projectile Motion	Lectures presented in PDF format	Daily exams homework assignments monthly
12	4	Analysis of projectile motion	Analyzing Projectile Motion	Lectures presented in PDF format	Daily exams homework assignments monthly

13	4	Explanation of quantities and calculations of linear motion	Linear Kinematics Quantities	Lectures presented in PDF format	Daily exams homework assignments monthly
14	4	Factors affecting the trajectory of projectiles	Factors Influencing Projectile Trajectory	Lectures presented in PDF format	Daily exams homework assignments monthly
15	4	Explain the relationships between the components of angular motion	Angular Kinematics of Human movement	Lectures presented in PDF format	Daily exams homework assignments monthly

### 11. Course Evaluation

- ☑ Daily exams with practical and scientific questions.
- ☑ Participation scores for difficult competition questions among students
- ☑ Establishing grades for environmental duties and the reports assigned to them
- ☑ Semester exams for the curriculum, in addition to the mid-year exam and final exam

### 12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Basic biomechanics Susan J. Hall Eighth edition
Main references (sources)	<ul style="list-style-type: none"> <li>• College library to obtain additional sources for academic curricula</li> <li>• Check scientific websites to see recent developments in the subject</li> </ul>
Recommended books and references (scientific journals, reports...)	All reputable scientific journals that are related to the broad concept of biomechanics