Course Description Form

1. Course Name:
Bio–Tribology
2. Course Code:
WBM-52-06 / BioTribology
3. Semester / Year:
Semester 2
4. Description Preparation Date:
2025
5. Available Attendance Forms:
Weekly / theoretical
6. Number of Credit Hours (Total) / Number of Units (Total)
26/2
7. Course administrator's name (mention all, if more than one name)
Name: Lec. Natiq Aziz Omran Email:

8. Course Objectives

Course Objectives	• To introduce students to Bio tribology and its multiple applications. • To differentiate between surface types and their interaction modes. • To justify the choice of materials used in implants and prosthetics. • To calculate friction and lubrication values for various surfaces. • To evaluate the quality and suitability of prosthetics for users.

9. Teaching and Learning Strategies

Strategy	• Textbooks and lectures. • Detailed theoretical lectures by the instructor. • Student participation in solving applied problems during lectures. • Use of blended e-learning methods.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	Student understands the lecture	Introduction to Bio tribology	Theoretical lecture	Daily Quiz + Discussion
2	2	Student understands the lecture	Types of Surfaces	Theoretical lecture	Daily Quiz Discussion
3	2	Student understands the lecture	Friction Calculations	Theoretical lecture	Daily Quiz Discussion
4	2	Student understands the lecture	Types of Friction	Theoretical lecture	Daily Quiz Discussion
5	2	Student understands the lecture	Laws of Static and Dynamic Friction	Theoretical lecture	Daily Quiz Discussion
6	2	Student understands the lecture	Theories and Types of Wear	Theoretical lecture	Daily Quiz Discussion
7	2	Student understands the lecture	Wear Measurements	Theoretical lecture	Daily Quiz Discussion
8	2	Student understands the lecture	Friction and Wear Measurement	Theoretical lecture	Daily Quiz Discussion
9	2	Student understands the lecture	Lubrication Mechanism	Theoretical lecture	Daily Quiz Discussion
10	2	Student understands the lecture	Hydrodynamic Lubrication	Theoretical lecture	Daily Quiz Discussion

11	2	Student understands the lecture	Elastic Hydrodynamic Lubrication	Theoretical lecture	Daily Quiz Discussion
12	2	Student understands the lecture	Human Joints	Theoretical lecture	Daily Quiz Discussion
13	2	Student understands the lecture	Lubrication of Human Joints	Theoretical lecture	Daily Quiz Discussion
14	2	Student understands the lecture	Bio tribology of Artificial Joints	Theoretical lecture	Daily Quiz Discussion
15	2	Student understands the lecture	Lubrication of Artificial Joints	Theoretical lecture	Daily Quiz Discussion

11. Course Evaluation

Mid exam	25%
Participation , assignments, presentation,	15%
Final exam	60%
`total	100%

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Biotribology by J. Paulo Davim, 2013
Main references (sources)	Biotribology by J. Paulo Davim, 2013
Recommended books and references (scientific journals, reports…)	Journal of Biotribology, ISSN 2352-5738
Electronic References, Websites	Websites of companies manufacturi medical implants and prosthetics