



GUJARAT TECHNOLOGICAL UNIVERSITY
Integrated Master of Science (Biotechnology)

Semester: 8

Subject Name: Swimming

Subject Code: 1380415

Prerequisite:

Basic understanding of water safety rules and hazards; Physical fitness and willingness to engage in swimming activities; No prior swimming experience is required, but comfort in water is beneficial.

Rationale:

Swimming and water safety are essential life skills that enhance physical fitness, survival skills, and confidence in aquatic environments. This course equips learners with fundamental swimming techniques, safety protocols, and emergency response skills, ensuring they can swim effectively, prevent water hazards, and perform lifesaving measures when needed.

Course Scheme :

Teaching Scheme			Total Credits	Assessment Pattern and Marks				Total Marks
L	T	PR		C	Theory		Practical	
			ESE (E)		PA(M)	ESE (V)	PA (I)	
0	0	4	2	0	0	0	50	50

Course Content:

Unit No.	Content	No. of Hours	Weightage (%)
1	History, hazards in water and safety precautions; pool maintenance and water quality control.	30	50
2	Learning swimming, understanding and practice of ducking the head, kicking action, holding breath under water and various strokes (free style, breast stroke, butterfly, back stroke); competitive swimming-relays and medleys, lap time practice, swimming and floating aids and their uses; diving - styles of diving, rules, regulations and precautions. Methods of life saving in water.	30	50
Total Hours:		60	100

Textbook:

1. The Complete Swimming Manual" – USA Swimming (2014)
2. Swimming: Steps to Success" – David G. Thomas (2015)
3. The Swimming Drill Book" – Ruben J. Guzman (2017)
4. Competitive Swimming Manual for Coaches and Swimmers" – Costill & Maglischo (2019)
5. The Science of Swimming" – James E. Counsilman (1997)

Reference Books:

1. Swimming Anatomy" – Ian McLeod (2010)
2. Water Safety Handbook" – American Red Cross (2020)
3. The Lifeguard Manual" – Royal Life Saving Society (2018)



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4. Diving Science" – Michael B. Strauss & Igor V. Aksenov (2004)
5. Aquatic Rescue & Safety" – Dennis K. Graver (2003)

Course Outcomes:

No.	Course Outcomes	RBT Level*
1	Understand the history, hazards, and safety precautions in water environments to ensure safe swimming practices.	RM, UN
2	Demonstrate proficiency in swimming techniques including freestyle, breaststroke, butterfly, and backstroke, along with breath control and floating skills.	AP, AN
3	Analyze and maintain water quality in pools through proper chemical balancing and sanitation techniques.	AN, EL
4	Apply life-saving methods and emergency rescue techniques to assist individuals in distress in aquatic environments.	AP, EL
5	Develop competitive swimming skills, improve lap time, and master diving techniques while adhering to rules and safety regulations.	AP, CR

*RM: Remember, UN: Understand, AP: Apply, AN: Analyze, EL: Evaluate, CR: Create

