Program	BS Physical Education	Course Code	PE-402	Credit Hours	01
Course Title	**Scientific Sports Coaching (Practical)**				

Course Introduction

The practical component of the Scientific Sports Coaching course is designed to provide students with hands-on experience in applying scientific principles and techniques to coaching practices. These sessions will cover various aspects of sports coaching, including performance analysis, training program design, and the use of technology in coaching.

Learning Outcomes

On the completion of the course, the students will:

- Understand the scientific principles underlying effective sports coaching.
- Apply physiological and biomechanical concepts to design training programs.
- Utilize psychological strategies to enhance athlete performance.
- Integrate nutritional science into coaching practices.
- Develop individualized coaching plans based on scientific evidence.
- Evaluate and modify training programs using scientific data.
- Conduct performance analysis and provide feedback to athletes.

	Course Content	Assignments/Readings
Week 1	**Introduction to Scientific Sports Coaching** • Orientation to the practical sessions • Overview of scientific coaching principles and methodologies • Introduction to performance analysis tools and software	From Books and Class Lectures
Week 2	**Athlete Assessment and Profiling** • Conducting physical fitness assessments (e.g., VO_2 max, strength tests, flexibility tests) • Profiling athletes based on performance data • Interpreting assessment results for training program design	From Books and Class Lectures
Week 3	**Biomechanical Analysis of Sports Movements** • Recording and analyzing sports movements using video analysis software • Identifying fundamental biomechanical principles in various sports • Providing feedback to athletes based on biomechanical data	From Books and Class Lectures

Week 4	**Designing Training Programs** • Principles of periodization in training programs • Creating individualized training plans based on athlete assessments • Integrating strength, endurance, flexibility, and skill training into programs	From Books and Class Lectures
Week 5	**Implementing Training Programs** • Practical application of designed training programs • Monitoring athlete performance and making adjustments to training plans • Utilizing technology (e.g., heart rate monitors, GPS) to track training progress	From Books and Class Lectures
Week 6	**Sports Nutrition and Hydration** • Assessing dietary intake and nutritional needs of athletes • Designing nutrition plans to support training and performance • Monitoring hydration levels and implementing hydration strategies	From Books and Class Lectures
Week 7	**Mental Skills Training** • Techniques for enhancing athlete focus, motivation, and confidence • Practical exercises for mental rehearsal, visualization, and goal setting • Integrating mental skills training into regular coaching sessions	From Books and Class Lectures
Week 8	**Injury Prevention and Management** • Identifying common sports injuries and their causes • Implementing injury prevention strategies (e.g., warm-ups, cool-downs, stretching) • Practical first aid and injury management techniques	From Books and Class Lectures
Week 9	**Strength and Conditioning Techniques** • Practical application of strength training exercises • Implementing conditioning drills for various sports • Using technology to monitor and assess strength and conditioning progress	From Books and Class Lectures
Week 10	**Coaching Communication and Feedback** • Effective communication strategies with athletes • Providing constructive feedback and motivation	From Books and Class Lectures

	• Role-playing coaching scenarios to practice communication skills	
Week 11	**Performance Analysis and Feedback** • Analyzing game footage and performance metrics • Giving input to athletes based on performance analysis • Utilizing technology for real-time performance feedback	From Books and Class Lectures
Week 12	**Team Dynamics and Leadership** • Understanding team dynamics and the role of the coach • Practical exercises for building team cohesion and leadership skills • Strategies for managing conflicts and fostering a positive team environment	From Books and Class Lectures
Week 13	**Advanced Coaching Technologies** • Introduction to advanced coaching technologies (e.g., motion capture, wearable tech) • Practical application of these technologies in coaching sessions • Analyzing data from advanced coaching tools to enhance performance	From Books and Class Lectures
Week 14	**Developing Coaching Philosophy and Style** • Reflecting on personal coaching philosophy and style • Practical exercises to develop and refine the coaching approach • Implementing coaching philosophy in practice sessions	From Books and Class Lectures
Week 15	**Coaching Practicum** • Applying coaching skills in actual or simulated sports environments • Planning and conducting coaching sessions with athletes • Receiving feedback from peers and instructors on coaching performance	From Books and Class Lectures
Week 16	**Practical Exam and Review** • Practical exam assessing coaching skills learned throughout the course • Review session and discussion of key learnings • Course wrap-up and feedback	From Books and Class Lectures
Textbooks and Reading Material		

Textbooks

- Baechle, T. R., & Earle, R. W. (2022). Essentials of strength training and conditioning (4th ed.). Human Kinetics.
- Benardot, D. (2019). Advanced sports nutrition (3rd ed.). Human Kinetics.
- Bompa, T. O., & Buzzichelli, C. A. (2018). Periodization training for sports (4th ed.). Human Kinetics.
- McGinnis, P. M. (2018). Biomechanics of sport and exercise (4th ed.). Human Kinetics.
- Weinberg, R. S., & Gould, D. (2021). Foundations of sport and exercise psychology (7th ed.). Human Kinetics.
- Zatsiorsky, V. M., & Kraemer, W. J. (2021). Science and practice of strength training (4th ed.). Human Kinetics.