EVERYDAY SCIENCE

Course Code PE-163 **Credit Hours** 3 (2-1)

Course Description

This course introduces students to fundamental scientific principles and their applications in everyday life. It covers essential topics in physics, chemistry, biology, and environmental science, focusing on their relevance to human health, sports science, and physical education. Through hands-on practical activities, students will understand how scientific concepts shape the world around them and improve their problem-solving skills.

Course Learning Outcomes (CLOs)

By the end of this course, students will be able to:

1. Explain basic scientific concepts and their role in everyday life.
2. Apply scientific knowledge to understand physical, chemical, and biological phenomena.
3. Relate fundamental scientific principles to physical activity, sports, and human health.
4. Develop critical thinking and problem-solving skills through experiments and observations.
5. Evaluate the impact of environmental factors on human health and athletic performance.

Course Content

Week 1-2

Introduction to Science

- Scientific Method and Inquiry
- Importance of Science in Daily Life
- Contributions of Science to Health and Sports

Week 3-4

Basic Physics in Everyday Life

- Motion, Force, and Newton's Laws in Sports
- Energy, Work, and Power in Physical Activities
- Gravity and its Effects on Human Movement
- **Practical**: Measuring Force and Motion in Physical Exercises

Week 5-6

Chemistry and Human Life

- Structure of Matter: Atoms, Elements, and Compounds
- Chemical Reactions and Their Everyday Applications
- Acids, Bases, and pH Balance in the Human Body
- **Practical**: Identifying pH Levels in Everyday Substances

Week 7-8

Biology and Human Health

- Human Organ Systems and Their Functions
- Role of Nutrition and Digestion in Physical Performance
- Immune System and Disease Prevention
- **Practical**: Investigating the Effect of Diet on Energy Levels

Week 9-10

Environmental Science and Sustainability

- Air, Water, and Soil Pollution and Their Effects on Health
- Climate Change and Its Impact on Sports and Physical Activity

- Sustainable Practices in Daily Life
- **Practical**: Analyzing Air and Water Quality in Local Environments

Week 11-12

Scientific Innovations in Sports and Fitness

- Advancements in Sports Equipment and Technology
- Biomechanics and Performance Enhancement
- Drug Use and Ethical Issues in Sports
- **Practical**: Evaluating Sportswear and Equipment for Performance Enhancement

Week 13-14

Science and the Human Mind

- Brain Function and Cognitive Abilities
- Psychology of Exercise and Motivation
- Sleep and Its Impact on Physical Performance
- **Practical**: Measuring Reaction Times and Cognitive Function in Athletes

Week 15-16

Final Assessments and Review

- Comprehensive Review of Course Content
- Final Theory Examination
- **Practical Demonstrations & Project Presentations**

Teaching and Learning Methods

- **Lectures**: Multimedia presentations and interactive discussions.
- **Hands-on Experiments**: Conducting simple scientific experiments.
- **Case Studies**: Analyzing real-world applications of science.
- **Group Projects**: Exploring scientific topics related to sports and fitness.
- **Fieldwork**: Observing environmental and biological phenomena in the real world.

Recommended Books (APA Style)

1. Giordano, N. J. (2022). *College physics: Reasoning and relationships* (3rd ed.). Cengage Learning.
2. Tortora, G. J., Derrickson, B. H. (2020). *Principles of Anatomy and Physiology* (16th ed.). Wiley.
3. Campbell, N. A., & Reece, J. B. (2020). *Biology* (12th ed.). Pearson.
4. Miller, G. T., & Spoolman, S. (2021). *Environmental science* (16th ed.). Cengage Learning.
5. Fahey, T. D., Insel, P. M., & Roth, W. T. (2019). *Fit & well: Core concepts and labs in physical fitness and wellness* (14th ed.). McGraw-Hill.