COURSE OUTLINE BRIEFS

DEPARTMENT OF SPORTS SCIENCES

SARGODHA UNIVERSITY
Pathway to Progress

FACULTY OF
ARTS AND HUMANITIES

OVERVIEW

Sports Sciences as an academic discipline has scientific aspects and covers a broad range of fields including human physiology, psychology and biomechanics, and their relationship to sports performance, health and well-being. The Department of Sports Sciences is promoting sports leadership, teamwork and ethics, and provides students opportunities to design and enhance the intellectual assets and moral values required to lead meaningful lives while impacting society in respectful ways.

The Department was established in 2009 and renamed in 2012 as the 'Department of Sports Sciences'. The Department is presently offering MSc in the discipline of Physical Education. The program emphasizes scientific academic preparation combined with playfield experiences, coaching techniques and Human Sports Performance Laboratory Analysis (HSPLA).

The Department has two experienced MPhil and four MSc qualified faculty members while many qualified visiting professionals encourages our students for applied research in the area of Human Anatomy, Exercise Physiology, Sports Psychology, Sports Nutrition, Bio-Mechanics and the Techniques of Scientific Coaching by using the latest technology to improve the sports performance.

The Department envisages preparing professionally innovative sports leaders, sports administrators, managers, coaches, players, fitness instructors, teachers, scholars & sports scientists capable of addressing the challenges being faced by the national sports organizations and educational institutions in the country.

Academic Programs Offered

1. M.Sc. Physical Education

M.Sc. Physical Education

Eligibility: At least 45% marks in Graduation or equivalent + Qualify Physical Efficiency Test
Duration: 02 Year Program (04 Semesters)
Degree Requirements: 66 Credit Hours

Semester-1

Course Code	Course Title	Credit Hours
PEDU-6201	Sports Management & Administration	03
PEDU-6202	Human Anatomy	03
PEDU-6203	Computer Application in Sports	00
PEDU-6204	Rules of Track & Field Events	03
PEDU-6205	Practical Gymnastic (Floor Exercises)	02
PEDU-6206	Practical Games (Hockey & Cricket)	02
PEDU-6207	Practical Athletics (Sprint Races)	02

Semester-1I

Course Code	Course Title	Credit Hours
PEDU-6208	Theory of Games	03
PEDU-6209	Citizenship Education and Community	0
PEDU-6210	Exercise Physiology	03
PEDU-6211	Methods of Research in Sports	03
PEDU-6212	Practical Gymnastic (Apparatus work)	02
PEDU-6213	Practical Games (Hand Ball & Volley Ball)	02
PEDU-6214	Practical Athletics (Vertical & Horizontal jumps)	02

Semester-1II

Course Code	Course Title	Credit Hours
PEDU-6215	Science of Sports Training	03
PEDU-6216	Sports Psychology	03
PEDU-6217	Measurement evaluation in Human Performance	03
PEDU-6218	Research Project / Thesis / Internship	03
PEDU-6219	Practical Athletics (Middle & Long Distance Races)	02
PEDU-6220	Practical Games (Football & Basket Ball)	02
PEDU-6221	Practical Minor Area Games	02

Semester-1V

Course Code	Course Title	Credit Hours
PEDU-6222	Sports Bio-Mechanics	03
PEDU-6223	Sports Nutrition	03
PEDU-6224	Sports Injuries & Rehabilitations	03
PEDU-6225	Research Project / Thesis / Internship	03
PEDU-6226	Practical Athletics (Throwing Events)	02
PEDU-6227	Practical Games (Table Tennis & Badminton)	02
PEDU-6228	Practical (Hiking / Hill Tracking)	02

MSc

PHYSICAL EDUCATION

PEDU-6201 Sports Management & Administration 3 (3+0)

This course is graduate level course of M.Sc. Physical Education. The aim of the course is to enable students to develop essential skill required in sports management and administration. In this course students will get the knowledge of management processes such as planning, directing, organizing, staffing and controlling, operations, strategies, total quality management and marketing. Students will get understanding of management and administration principles, various leadership styles and their practical applications, scope of the subject and career opportunities in various national and international sports organizations, fitness and sports industry. Students will learn structure and organizational hierarchy of various national and international sports organizations, various managerial positions and will enhance professional and communication skills to hunt appropriate job in job market effectively and efficiently. Students will be able to plan and organize sports events as a team leader and as a team member. Students will be able to apply research methods, and an understanding of the specific needs and norms of the sports organizations, fitness and sports industry.

Contents

1. Introduction to Administration and Management
2. Organization Structure and Designs
3. Human Resource Management
4. Facility Management
5. Financial Management
6. Inventory and Purchasing
7. Maintenance of Existing Facilities

Recommended Texts

1. Chelladurai, P., & Kerwin, S. (2017). *Human resource management in sport and recreation* (3rd ed.). Champaign, IL: Human Kinetics.
2. Hoye, R., Smith, A. C., Nicholson, M., & Stewart, B. (2018). *Sport management: principles and applications* (5th ed.). London, UK: Routledge.

Suggested Readings

1. Ruta, D., & Sala, I. (2018). HRM in Sport Organizations. In, Brewster C., Cerdin JL. (eds), *HRM in Mission Driven Organizations* (pp. 183-220). London, UK: Palgrave Macmillan.
2. Gentile, D. (2019). *Athletic Administration for College, High School, Youth, and Club Sport.*Burlington, MA: Jones & Bartlett Learning.
3. Lussier, R. N., & Kimball, D. C. (2019). *Applied sport management skills* (3rd ed.). Champaign, IL: Human Kinetics.
4. Pedersen, P. M., & Thibault, L. (2019). *Contemporary Sport Management* (6th ed.). Champaign, IL: Human Kinetics.

PEDU-6202 **Human Anatomy** **3 (3+0)**

The purpose of this course is to aid students in acquiring a basic understanding of, and new appreciation for, the structures of the human body and their relationships using a systems-based approach. Students will be introduced to anatomic terminology in order to facilitate this understanding. Knowledge of anatomy is a fundamental component of sports coaching profession. Topics covered will include the basic organization of the body and major body systems along with the impact of diseases on certain systems. Working with topics of basic anatomical terminology to the biochemical composition of the human body, all the way into great detail of each of the major systems of the body, One of the goals of this course is to prepare students with the skills necessary to be successful in future sports science theory classes and in sports practical. The major purpose of the course is to provide the students with a comprehensive overview of normal structure and function morphology and functional anatomy of the human body.

Contents

1. Introduction to Human Anatomy
2. Bones & Joints
3. Skeletal Muscles
4. Nervous System
5. Digestive System
6. Cardiovascular System
7. Respiratory System
8. Endocrinology
9. Injuries & Rehabilitation
10. Fracture
11. Sprain
12. Muscle injuries

Recommended Texts

1. Jarmey C. (2018). *The Pocket Atlas of Human Anatomy: A Reference for Students of Physical Therapy, Medicine, Sports, and Bodywork* (2nd ed.). North Atlantic Books.
2. *Netter, F. H.*(2019). *Atlas of Human Anatomy: Netter Basic Science* (7th ed.). New York: Elsevier.

Suggested Readings

1. Roberts, A. M. (2016). *The complete human body: The definitive visual guide* (2nd ed.). London: Dorling Kindersley Limited.
2. Scanlon, V. C., & Sanders, T. (2018). *Essentials of anatomy and physiology*. Philadelphia: F. A. Davis Company.
3. Patton, K. T., & Thibodeau, G. A. (2018). *Anthony's Textbook of Anatomy & Physiology* (21st ed.). Wisconsin, USA: Elsevier.
4. Drake, L., Wayne, A., Mitchell, W.M. (2020). *Gray's anatomy for students* (4th ed.). Philadelphia: Elsevier.

PEDU-6203 Introduction to Information & Communication Technologies 3 (3+0)

The course introduces students to information and communication technologies and their current applications in the irrespective areas. Objectives include basic understanding of computer software, hardware, and associated technologies. They can make use of technology to get maximum benefit related to their study domain. Students can learn how the Information and Communications systems can improve their work ability and productivity. How Internet technologies, E-Commerce applications and Mobile Computing can influence the businesses and workplace. At the end of semester students will get basic understanding of Computer Systems, Storage Devices, Operating systems, E-commerce, Data Networks, Databases, and associated technologies. They will also learn Microsoft Office tools that include Word, Power Point, and Excel. They will also learn Open office being used on other operating systems and platforms. Specific software's related to specialization areas are also part of course. Course will also cover Computer Ethics and related Social media norms and cyber laws.

Contents

1. Introduction, Overview and its types.
2. Hardware: Computer Systems & Components, Storage Devices and Cloud Computing.
3. Software: Operating Systems, Programming and Application Software,
4. Introduction to Programming Language
5. Databases and Information Systems Networks
6. The Hierarchy of Data and Maintaining Data,
7. File Processing Versus Database Management Systems
8. Data Communication and Networks.
9. Physical Transmission Media Wireless Transmission Media
10. Applications of smart phone and usage
11. The Internet, Browsers and Search Engines.
12. Websites Concepts, Mobile Computing and their applications.
13. Collaborative Computing and Social Networking
14. E-Commerce& Applications
15. IT Security and other issues
16. Cyber Laws and Ethics of using Social media
17. Use of Microsoft Office tools (Word, Power Point, Excel), mobile apps or other similar tools depending on the operating system
18. Other IT tools/software specific to field of study of the students if any

Recommended Texts

1. Vermaat, M. E. (2018). *Discovering computers: digital technology, data and devices*. Boston: Course Technology Press.
2. Schneider, G. M., & Gersting, J. (2018). *Invitation to computer science*. Boston: Cengage Learning.

Suggested Readings

1. Timothy J. O'Leary & Linda I. (2017). *Computing essentials* (26th ed.). San Francisco: McGraw Hill Higher Education.

PEDU-6204 **Rules of Track & Field Events** **3 (3+0)**

Track and field is a sport that incorporates different types of athletic events. Track events are running events that range from short distance sprints to middle distance runs of a mile or so to long distance runs, like a 26-mile plus marathon. Field events include strength events, such as the shot put and discus, and throwing events, such as the javelin and hammer. The heptathlon and the decathlon are a combination of seven and ten events, respectively, and incorporate both track and field contests together in a quest for the highest score. The purpose of the course is to equip the students with the latest techniques and technology, rules and regulations laid down by the International Association of Athletics Federations (IAAF).Through these course students are tuned to get the required information regarding marking of the standard tracks, judgment and officiating for various Athletic Events including: Running, Jumping and Throwing etc.

Contents

1. Olympic Movements
2. Specification of Standard Track
3. Organization and Administration of Athletic Competition
4. Rules of Track Events
5. Jumping Events
6. Horizontal Jumps
7. Vertical Jumps
8. Throwing Events
9. Combined events competitions
10. Race Walking Events
11. Road Races
12. Cross Country, Mountain and Trail Races
13. Athletic Committees
14. Official and their duties

Recommended Texts

1. Gifford, C. (2012). *Track and field* (7th ed.). Mankato, MN: Amicus.
2. Rasool, S. (2018). *Rules of track and field events* (3rd ed.). Lahore Ilmi Publishers.

Suggested Readings

1. Koerner, H., & Chase, A. W. (2014). *Hal Koerner's field guide to Ultrarunning: Training for an Ultramarathon, from 50K to 100 miles and beyond* (5th ed.). Boulder, CO: VeloPress.
2. Gilani, B. (2018). *Rules of track and field events* (4th ed.). Lohore: Gilani Publishers.
3. Kastor, A. (2018). *Running your first marathon: The complete 20-week marathon training plan* (2nd ed.). Emeryville, CA: Rockridge Press.

PEDU-6205 **Practical Gymnastic (Floor Exercises)** **2 (0+2)**

This module introduces the student to the basic knowledge about the importance of gymnastics in physical education and its function in the formation of physical fitness. The student should get to know the gymnastic terminology, correct technique of performance, the methods of teaching and spotting procedures applied in primary gymnastics. The aim of the course is to familiarize students. Combine the lesion and benefits of gymnastics in terms of strength, flexibility, courage, coordination and determination and you have the making of a complete athlete who is reading for any sports or activity. To develop confidence in fundamental movements, experience, jumping, sliding, rolling, moving over, under and on apparatus and develop coordination and gross motor skills. Skilful and creative mastery of the body in the gymnastic context. Enhance knowledge and understanding of gymnastic as an aesthetic experience. Enrich personal and social development through interaction with others in a variety of structure context.

Contents

1. Introduction to gymnastic
2. General and specific warm up & cool down exercises
3. Arms stretching exercises
4. Trunk strengthen exercises
5. Rocking and rolling exercises
6. Strengthen the gluteus, hamstring muscles
7. Conducting & officiating skills
8. Methodology of teaching the different kinds of splits, back arching and bridge
9. Methodology of teaching the forward and backward rolls
10. Coaching techniques about gymnastics
11. organizing and officiating
12. Coaching & Umpiring Skills

Recommended Texts

1. Light, R. (2019). *Positive pedagogy for sport coaching: Athlete-centred coaching for individual sports* (2nd ed.). Abingdon, Oxon: Routledge, an imprint of the Taylor & Francis Group.
2. Walduck, V. (2020). *My book of gymnastics* (1st ed.). New York: DK Publishing.

Suggested Readings

1. Wirhed, R., Gabra, G., Salander, S., Courtney, M., Hogarth, B., & Murray, G. (2006). *Athletic ability and the anatomy of motion* (3rd ed.). Edinburgh: Elsevier.
2. Joyce, D. (2016). *Sports injury prevention and rehabilitation: Integrating medicine and science for performance solutions*. London: Routledge.
3. Schlegel, E., & Dunn, C. R. (2018). *The gymnastics book: The young performer's guide to gymnastics* (3rd ed.). New York: Firefly Books.

PEDU-6206 **Practical Game (Hockey, Cricket)** **2 (0+2)**

Games are essential for a good health. Therefore, all young men and women ought to play games. Those who play games frequently will maintain a good health. They can develop a muscular body. Games teach us the spirit of patience and courage. Discipline is incredibly essential not just for the progress of an individual however conjointly for the progress of the nation as a whole. Young boys and girls can even develop the standard of leadership through games. Main objective of this course seeks to emphasize the enhancement of professional abilities and skills of the students with overall leadership qualities. It also develops students' physical competence and knowledge of movement and safety and their ability to use these to perform in a wide range of activities associated with the development of an active and healthy lifestyle. At the end of course students will become more professional in various fields of physical education and sports like, teachers, coaches, match officials, psychologist and trainers etc.

Contents

1. Introduction of Cricket
2. Proper Warm up and Cool Down Methods
3. Ball, Bat, Ground, Positions
4. Equipment, Measurement
5. Dimensions of the ground
6. Basic Rules of Cricket
7. Game Skills
8. Coaching & Umpiring Skills
9. Introduction of Hockey
10. Warm up and Cool Down
11. Methods and Techniques
12. Guideline for Hockey, Grip, Control
13. Measurement of Ball, Hockey and ground
14. Ground, Positions, Equipment
15. Measurement Dimensions, Basic Rules of Hockey
16. Drills with Ball, Passing Skills
17. Dribbling Skills
18. Shooting Skills, Attacking Skills, Defending Skills,
19. Coaching & Umpiring Skills

Recommended Texts

1. Nash, C. (2015). *Practical sports coaching* (1st ed.). London: Routledge.
2. Wormhoudt, R., Savelsbergh, G. J., Teunissen, J. W., &Davids, K. (2018). *The athletic skills model optimizing talent development through movement education* (2nd ed.). London: Routledge.

Suggested Readings

1. Wirhed, R., Gabra, G., Salander, S., Courtney, M., Hogarth, B., & Murray, G. (2006). *Athletic ability and the anatomy of motion* (3rd ed.). Edinburgh: Elsevier.
2. Coulson, M. (2017). *The fitness instructor's handbook: The complete guide to health and fitness*. London: Bloomsbury.

PEDU-6207 **Practical Athletics (Sprint Races)** **2 (0+2)**

This course is a graduate level practical course of M.Sc. Physical Education. The course covers theoretical topics as well as practical application and skill performance of sprint race including 100m, 200m, 400m and 800m, 4 x 100m, 4 x 400m, 100m hurdle, 110m hurdle, 400m hurdles. The main focus of the practical is to enable students to design a training program for themselves and for other athletes with coaching perspectives, containing general and specific warm up, cool down, static and dynamic stretching exercises, practice of technical and tactical skills to improve physical performance. It will increase students' understanding with up to date rules and regulation framed by World Athletics (International Track and Field Organization). The practical sessions enable students to identify periodization of training ranging from off season training to peak season training, division of training program to micro, mesa and macro cycles. It also familiar them with international records, events along with state of the art technology used in track and field events for continuous performance development process.

Contents

1. Introduction of Sprint Races
2. Warm up & Cool Down Methods & Techniques (General & Specific)
3. Stretching and strengthening exercise
4. Neuromuscular coordination exercises
5. Static and dynamic stretching
6. Races with different intensity
7. Improve stride length and stride frequency
8. Power training
9. Coordination exercises
10. Weight Training/ Resistance Training exercises
11. Rules and Regulation of Sprint Races
12. Duties and of officials & organizing committee
13. Demonstration and Presentation

Recommended Texts

1. Shepherd, J. (2009). *101 Youth Athletics Drills*. London, UK: A & C Black Publisher Ltd.
2. Gifford, C. (2012). *Track and field* (7th ed.). Mankato, MN: Amicus.

Suggested Readings

1. American Sport Education Program (2008). *Coaching youth track & field.* Champaign, IL: Human Kinetic.
2. Husbands, C. (2013). *Training, techniques and improving performance.* Ramsbury, England: The Crowood Press.
3. Lewindon, D., & Joyce, D. (2014). *High-Performance Training for Sports*. Champaign, IL: Human Kinetics.
4. Smith, J. & Clark, J. (2018). *Speed strength: a comprehensive guide to biomechanics, demands and training methodology for linear speed.* Berkely, CA: Just Fly Sports.

PEDU-6208 **Theory of Games** **3 (3+0)**

This course is designed to equip the students/ learners with the updated knowledge regarding rules and regulations of various team sports as well as facility management. Play fields are dimension, judgment and officiating for different games at different levels. Another, a key component of the course is to enhance the performance of the Athletes. The ultimately purpose of the course is to provide deep knowledge about the philosophy of Rules and techniques of different games. The major concerned of this course is to provide learning experiences that will lead to the development of basic skills in team sports. In addition to skill acquisition, the course will focus on how to plan and implement the four stages of skill development in games through the use of extending, refining, and application tasks. An emphasis will be placed on the use of the game stages and movement framework as a guide for designing a variety of sports game experiences for students.

Contents

1. Types of Tournaments
2. Round Robin (League system)
3. Elimination (knock out)
4. Combination, Consolation
5. Double climination, Ladder
6. Pyramid, Organization and Administration
7. Planning of sports facilities, their care and maintenance
8. Playfields, Gymnasia
9. Stadia, Covered areas
10. Artificial surfaces
11. Rules and techniques of the following games and their application
12. Badminton, Basket ball
13. Cricket, Football, Hand ball
14. Hockey, tennis, Table tennis, Volley ball

Recommended Texts

1. Schott, G. (2016). *Violent games: Rules, realism, and effect* (4th ed.). London: Bloomsbury.
2. Gilani, B. *(2018). Theory of Games* (3th ed.). Lahore: Gilani Publishers.

Suggested Readings

1. Masterman, G. (2014). *Strategic sports event management* (3rd ed.). New York, NY: Routledge.
2. Anniss, M. (2016). *The impact of technology in sport* (6th ed.). London: Raintree.
3. Rasool, S. (2018). *Theory of Games*(4th ed.). Lahore: Ilmi Publishers.
4. Harper, J. (2020). *Sporting gender: The history, science, and stories of transgender and intersex athletes* (3rd ed.). London: Rowman and Littlefield.

PEDU-6209 Citizenship Education and Community Engagement 3 (3+0)

This course emphasized how to experience the social contact with the community, and how to mobilize community for the development. Teach students the importance and role of active citizenship in promoting a productive, harmonious and development society/ world. Educate students about the importance of concepts, skills and philosophy of community linkages in developing a sustainable society. Inculcate the importance of community involvement for ensuring an improved, tolerant and generative society/ world. Provide an opportunity to the students to develop their relationship with the community. The course includes wider issues including culture, gender, special needs, equity and equality and collaborative working condition with in the community. This course will provide an orientation for the process of socialization and social factors which may affect education. This course has not theoretical perspective but some practical aspects as well, like community work, improving social interaction activities, and promotion of healthy environment.

Contents

1. Introduction to citizenship education and Community Engagement
2. Identity, Culture, and Social Harmony
3. Multi-cultural society and inter-cultural dialogue
4. Active Citizen: Locally Active, Globally Connected
5. Human rights, constitutionalism and citizens' responsibilities
6. Social issues in Pakistan
7. Social Action Project
8. Assignment (Formative/Summative)

Recommended Texts

1. C, bob. (2018). Building kid's citizenship through community engagement. New York: Die Deutsche Nationalbibliothek.
2. Kennedy, k. j.(2019). Civic & citizenship education in volatile times preparing students for citizen in 21 century, Hong Kong: Springer.

Suggested Readings

1. Abbott, J. (2013). *Sharing the city: community participation in urban management*. (3rd ed.).Routledge.
2. Rivlin, A. M., Shalala, D. (2015). *Systematic Thinking for Social Action*. New York: Brooking Intuition Press.

PEDU-6210 **Exercise Physiology** **3 (3+0)**

The purpose of this course is to increase the student's knowledge and understanding about human physiology and the adaptations that occur during exercise. Exercise physiology is a branch of physiology that deals with the functioning of the human body during exercise. An understanding of how the body responds to acute and chronic exercise is crucial for the physical educator, athletic trainer, coach, fitness expert, or exercise physiologist. Emphasis is placed on bioenergetics as well as circulatory, respiratory and neuromuscular responses to the physical stress of exercise. Also discussed are the effects of environmental factors and cryogenic aids on athletic performance. The objective of this course is for the student to gain an understanding and working knowledge of how the body responds to exercise so that they may apply this knowledge to their chosen field. Indeed, understanding the interactions of metabolism, circulation, and structural adaptations in response to exercise and training are required to be an effective teaching or health care professional.

Contents

1. Introduction of Physiology
2. Bio-Energetic
3. Conditioning in Sports
4. Cardiovascular Systems
5. Respiratory System
6. Exercise and Environments
7. Doping
8. Role of I.O.C.
9. Types of doping tests
10. Prevention of doping
11. Aging Exercise and Disease Prevention
12. Aging
13. Diabetes
14. Obesity
15. Blood pressure
16. Osteoporosis

Recommended Texts

1. Ehrman, J., Gordon, P., Visich, P., & Keteyian, S. (Eds.). (2018). *Clinical Exercise Physiology* (4^{th} ed.).Champaign, IL: Human Kinetics.
2. Haff, G. G., &Dumke, C. (2018). *Laboratory Manual for Exercise Physiology* (2^{nd} ed.). Champaign, IL: Human Kinetics.

Suggested Readings

1. John, P., Cedric, X., Fabio, C.(2015).*Exercise physiology.* Philadelphia, F. A. Davis Company.
2. Scott, K., Edward, T. (2015). *Exercise physiology: theory and application to fitness and performance* (10^{th} ed.). New York: McGraw-Hill publisher.
3. Kenney, W. L., Costill, D. L., & Wilmore, J. H. (2020). *Physiology of sport and exercise* (7^{th} ed.). Champaign: Human Kinetics.

PEDU-6211 **Methods of Research in Sports** **3 (3+0)**

This course is a graduate level course of M.Sc. Physical Education. This course will provide students a basic understanding of research objectives, research problems, hypothesis, design, methodologies, instrumentation, statistical procedures, analysis, precision, variables, population and sampling. Enable them to read and interpret research articles, analyse the data presented therein and discover causes and effect relationship of variables, correlation, draw general principles and scientific generalization that can be applied to the solution of a wide range of problems in sports sciences, physical education and recreation nationally and internationally. Students will learn to read and interpret existing research articles, to select appropriate methodologies for a researchable question, and conduct a literature review on a topic of their own interest. The course will also build their foundation to prepare a research proposal while discovering a research gap from available literature including selection of research methods appropriate to meet desired outcomes of their research study.

Contents

1. Introduction of Research
2. Formulation and Selection of Research Problems
3. The Hypothesis
4. Methods of Research Design
5. Experimental Research
6. Methodology
7. Data Collection
8. Data Analysis
9. The Research Report

Recommended Texts

1. Jadhav, K.G., Pagare S.B., & Singh, S.K. (2007). *Research process in physical education & sports*: *an introduction.* New Delhi, India: Khel Sahitya Kendra Publishers.
2. Thomas, J. R., Nelson, J. K., & Silverman, S. J. (2015). *Research methods in physical activity* (7th ed.). Champaign, IL: Human Kinetics.

Suggested Readings

1. Price, M. (2013). *Lab reports and projects in sport and exercise science: A guide for students.* London, UK: Routledge.
2. Bell, J., & Waters, S. (2014). *Doing your research project: A guide for first time researchers* (6th ed.). London, UK: McGraw Hill.
3. Veal, A. J., & Darcy, S. (2014). *Research methods in sport studies and sport management: A practical guide.* London, UK: Routledge.
4. Smith, M. F. (2018). *Research methods in sport* (2nd ed.).London, UK: Sage Publications.

PEDU-6212 Practical Gymnastic (Apparatus work) 2 (0+2)

This module introduces the student to the basic knowledge about the importance of gymnastics in physical education and its function in the formation of physical fitness. The student should get to know the gymnastic terminology, correct technique of performance, the methods of teaching and spotting procedures applied in primary gymnastics. The aim of the course is to familiarize students. Combine the lesion and benefits of gymnastics in terms of strength, flexibility, courage, coordination and determination and you have the making of a complete athlete who is reading for any sports or activity. To develop confidence in fundamental movements, experience, jumping, sliding, rolling, moving over, under and on apparatus and develop coordination and gross motor skills. Skilful and creative mastery of the body in the gymnastic context. Enhance knowledge and understanding of gymnastic as an aesthetic experience. Enrich personal and social development through interaction with others in a variety of structure context.

Contents

1. Introduction of gymnastic (Apparatus Work)
2. Methodology of teaching the headstand and the handstand
3. Methodology of teaching the cartwheel
4. Arms and shoulders strengthen exercises
5. Isolate and strengthen upper limb of the body
6. Trunk and back exercises
7. More difficult forms of headstands, handstands, rolls and cartwheels
8. Conducting & officiating skills
9. Improving the fundamental acrobatic skills
10. Methodology of teaching the hand standing and head standing
11. Coaching techniques about apparatus work of gymnastics
12. organizing and officiating
13. Improving the performance pair and trios basic routines for best performance and demonstration

Recommended Texts

1. Harrison, T., & Huang, Z. (2006). *Courage to fly* (1st ed.). Calgary, Alta., Canada: Red Deer Press.
2. Low, S. (2016). *Overcoming gravity: A systematic approach to gymnastics and bodyweight strength* (2nd ed.). Houston: Battle Ground Creative.

Suggested Readings

1. Wirhed, R., Gabra, G., Salander, S., Courtney, M., Hogarth, B., & Murray, G. (2006). *Athletic ability and the anatomy of motion* (3rd ed.). Edinburgh: Elsevier.
2. Luo, Low, S., Chen, H., Chen, Z., & Liu, J. (2018). *Chao yuezhong li: Overcoming gravity: A systematic approach to gymnastics and bodyweight strength* (5th ed.). Xin beishi: Feng shu fang wen huachu ban she.
3. Schlegel, E., & Dunn, C. R. (2018). *The gymnastics book: The young performer's guide to gymnastics* (3rd ed.). New York: Firefly Books.

PEDU-6213 Practical Games (Hand Ball + Volley Ball) 2 (0+2)

Games and sports are found in early human history and appear to be cultural universals. Volleyball and handball are popular indoor team event sports in which two teams are separated by centre line. Each team tries to score points by throwing/grounding a ball on the other team's net/court under organized rules. This course will Develop and share among members and others education, information, and leadership skills. Encourage members to promote the active participation by all youth in fun and healthy physical activities according to their interests and abilities. The purpose of this course is to provide learning experiences that will lead to the development of basic skills in team sports. In addition to skill acquisition, the course will focus on how to plan and implement the four stages of skill development in games through the use of extending, refining, and application tasks. Practice outside of class time and individual tutoring may be necessary for the students to achieve the expected performance level.

Contents

1. Introduction to Handball game
2. Ball, Ground, equipments, Measurement & Dimensions
3. Ball Catching, Ball throwing, Ball Passing, Ball Dribbling Skills
4. Jumps Shot, Penalty Shot, Throw off, Throw in, Offending & Defending Skills
5. Pivot, Goal Keeping Skills
6. Coaching Skills,
7. Conducting & Officiating Skills
8. Introduction to Volley Ball Game
9. Arms and shoulders strengthen exercises
10. Serving Skills
11. Digging (Passing) forearms, overhead
12. Ball Setting
13. Attack (Hitting)
14. Blocking – Attack; Defend
15. Defensive Skills – Rolling; Sliding

Recommended Texts

1. Joyce, D. (2014). *High-performance training for sports* (2nd ed.). Champaign, IL: Human Kinetics.
2. Prentice, W. E. (2017). *Principles of athletic training: A competency-based approach* (16th ed.). Vancouver, B.C.: Langara College.

Suggested Readings

1. Bompa, T. O., & Buzzichelli, C. (2015). *Periodization training for sports* (3rd ed.). Champaign: Human Kinetics.
2. Boyle, M. (2016). *New functional training for sports* (2nd ed.). Champaign, IL: Human Kinetics.
3. Konin, J. G., & Ray, R. (2019). *Management strategies in athletic training* (5th ed.). Champaign, IL: Human Kinetics.
4. Azar, F. M. (2019). *Illustrated tips and tricks in sports medicine surgery* (1st ed.). Philadelphia: Wolters Kluwer.

PEDU-6214 Practical Athletics (Vertical & Horizontal Jumps) 2 (0+2)

This course is a graduate level practical course of M.Sc. Physical Education. The course covers theoretical topics as well as practical application and skill performance of horizontal and vertical jumps including long jump, triple jump, high jump, and pole vault. The main focus of the practical is to enable students to design a training program for themselves and for other athletes with coaching perspectives, containing general and specific warm up, cool down, static and dynamic stretching exercises, and practice of technical and tactical skills to improve physical performance. It will increase students' understanding with up to date rules and regulation framed by World Athletics (International Track and Field Organization). The practical sessions enable students to identify periodization of training ranging from off season training to peak season training, division of training program to micro, meso and macro cycles. It also familiar them with international records, events along with state of the art technology used in track and field events for continuous performance development process.

Contents

1. Introduction of Vertical & Horizontal Jumps
2. General Warm up & Cool Down Methods
3. Rules & Techniques of Vertical & Horizontal Jumps
4. Phase of Vertical & Horizontal Jump
5. Specific Exercise for Jumps
6. Polymeric Training, Stretch Shortening Cycle (SSC)
7. Full Squats, Jump Rope, Jump Squats
8. Dynamic and Static Exercises
9. Adjustment of Take off
10. Workout of Jumps, 1st, 2nd, 3rd, Phase
11. Coordination Exercises/ Speed Training
12. Dynamic Setup, Hip Flexor Stretch
13. Stepping, Air Cycling, Landing
14. Weight Training and Power Clean, Coaching Skills
15. Duties of Officials and Organizing Committee
16. Coaching Techniques & Demonstration

Recommended Texts

1. Shepherd, J. (2009). *101 Youth Athletics Drills*. London, UK: A & C Black Publisher Ltd.
2. Gifford, C. (2012). *Track and field* (7th ed.). Mankato, MN: Amicus.

Suggested Readings

1. Rogers J. L. (2000).*USA Track & Field Coaching Manual*. Champaign, IL: Human Kinetics.
2. McGinnis, P. M.(2004). *Biomechanics of Sport and Exercise* (2nd ed.). Champaign, IL: Human Kinetics.
3. American Sport Education Program (2008). *Coaching youth track & field.* Champaign, IL: Human Kinetic.
4. Lewindon, D.,& Joyce, D. (2014). *High-Performance Training for Sports*. Champaign, IL: Human Kinetics.

PEDU-6215 **Science of Sports Training** **3 (3+0)**

This course is a graduate level course of M.Sc. Physical Education. Sports training course is designed to improve fitness level for the purpose of improving ability to perform a given sport. It includes corrective and restorative exercise, strength training, conditioning and cardiovascular training, sports specific techniques and drills, periodization, nutritional advice, mental and psychological training, and monitoring by a qualified trainer. The main aim of sports training is to improve the performance of athletes and is the most important aspect of Physical Education. The purpose of sports training is to achieve the highest possible sports result for a given individual. Training is efficient if this result is achieved with a minimal expenditure of time and energy. In accordance with the above statements, Science of Sports Training tells the reader how to achieve maximal results with minimum of effort. The purpose of athletic training is to achieve the highest possible sports result for a given individual. Training is efficient if this result is achieved with a minimal expenditure of time and energy.

Contents

1. Physical Fitness
2. Components of physical fitness
3. The Endurance Abilities
4. The Strength Abilities
5. The Speed Abilities
6. Flexibility
7. Psychological Training
8. Body Composition
9. Training Method
10. Training principles

Recommended Texts

1. Joyce, D. (2014). *High-performance training for sports* (2nd ed.). Champaign, IL: Human Kinetics.
2. Prentice, W. E. (2017). *Principles of athletic training: A competency-based approach* (16th ed.). Vancouver, B.C: Langara College.

Suggested Readings

1. Konin, J. G., & Ray, R. (2019). *Management strategies in athletic training* (5th ed.). Champaign, IL: Human Kinetics.
2. Gibson, A. L., Wagner, D. R., & Heyward, V. H. (2019). *Advanced fitness assessment and exercise prescription* (8th ed.). Champaign, IL: Human Kinetics.
3. Lox, C. L., A., M. G., Gainforth, H. L., & Petruzzello, S. J. (2020). *Thepsychology of exercise integrating theory and practice* (5th ed.). New York: Routledge

PEDU-6216 **Sports Psychology** **3 (3+0)**

The course is an introduction to the theoretical and practical aspects of Sports Psychology. The purpose of the course is to provide the student with the basic knowledge of psychological factors and processes that influence the individual in sports. Focus is placed on a research-to-practice orientation that is used to prepare for sports performance. The main objective of the designed content is as the bridge to meet the gap in psychological disorders and elite sports performance also inspiring the students to enhance their ability to work closely with both performers and coaches. It also focuses on teaching skills to enhance athletic performance such as goal setting, imagery and injuries rehabilitation. Moreover, helping the athletes and people to achieve their full sporting and exercise potential by solving their complex problems and working as the part of a team. This course also examines psychological theories and research and their application to the sport/physical activity-related affect, behaviours and cognitions of participants as well as the individual and environmental factors which shape these outcomes.

Contents

1. Introduction to Sports Psychology
2. Personality and sports
3. Nervous System of Human Body
4. Arousal, stress and anxiety
5. Cognitive and Behavioural Interventions for Peak Performance
6. Motivation and Performance
7. Concentration
8. Aggression in sports
9. Stress
10. Goal Setting
11. Self Confidence
12. Group Cohesion

Recommended Texts

1. Tenenbaum, G. (2015). *Applied sport psychology* (7th ed.). Milton Park, Abingdon, Oxon: Routledge.
2. Weinberg, R. S., & Gould, D. (2019). *Foundations of sport and exercise psychology* (7th ed.). Champaign, IL: Human Kinetics.

Suggested Readings

1. L., V. R., & Brewer, B. W. (2014). *Exploring sport and exercise psychology* (3rd ed.). Washington, D.C.: American Psychological Association.
2. Horn, T. S., & Smith, A. L. (2019). *Advances in sport and exercise psychology* (4th ed.). Champaign, IL: Human Kinetics.
3. Tod, D., & Eubank, M. (2020). *Applied sport, exercise, and performance psychology: Current approaches to helping clients*. Abingdon, Oxon: Routledge.
4. Lox, C. L., A., M. G., Gainforth, H. L., & Petruzzello, S. J. (2020). *Thepsychology of exercise integrating theory and practice* (5th ed.). New York: Routledge.

PEDU-6217 Measurement Evaluation in Human Performance 3 (3+0)

This course is designed to understand the fundamental and functional statistical tests, assessments, techniques, and evaluation concepts in the psychomotor, cognitive and affective domains; activities include collection and computer analysis of data in the area of Physical Education at various levels. It also provides the range of tests and techniques for testing Physical fitness, motor abilities and specific sports skills. e.g. (Reaction time, Endurance, Muscular Strength, Flexibility, Balance, Power, Speed, Agility, Coordination, Test criteria, Methods of grading etc. This course is intended to address the current practices in conducting data-based measurement and evaluation processes. Specifically, this course will examine statistical techniques necessary for manipulation and interpretation of various performance data. Descriptive statistics will be introduced and used for decision-making. The purpose of this course is to introduce students to the fundamental aspects of the measurement, analytic, and evaluative process for measuring Human Performance. The course includes both theoretical and practical applications.

Contents:

1. Introduction to Measurement and Evaluation
2. Grading in Physical Education
3. Basis of Statistics
4. Construction & Administration of a Test
5. Scales of Measurement
6. Characteristics of standard test
7. Evaluation of Aerobic Fitness or (Vo2 Max) Cardio – Vascular Fitness Aerobic Fitness
8. Measurement of Physical Fitness
9. Motor Performance Measurement
10. Evaluating Body Composition
11. Measurement of competitive sports skills
12. Measurement of Athletic skills

Recommended Texts

1. Morrow, J. R., Mood, D., Disch, J. G., & Kang, M. (2016). *Measurement and evaluation in human performance* (5th ed.). Champaign, IL: Human Kinetics.
2. Lacy, A. C., & Williams, S. M. (2018). *Measurement and Evaluation in Physical Education and Exercise Science* (8th ed.). New York: Routledge/Taylor & Francis Group.

Suggested Readings

1. Winnick, J. P., & Porretta, D. L. (2017). *Adapted physical education and sport* (6th ed.). Champaign, IL: Human Kinetics.
2. Ehrman, J. K., Liguori, G., Magal, M., & Riebe, D. (2018). *ACSM's guidelines for exercise testing and prescription* (10th ed.). Philadelphia, PA: Wolters Kluwer.
3. Gibson, A. L., Wagner, D. R., & Heyward, V. H. (2019). *Advanced fitness assessment and exercise prescription* (8th ed.). Champaign, IL: Human Kinetics.
4. Miller, D. K. (2020). *Measurement by the physical educator: Why and how* (8th ed.). New York, NY: McGraw-Hill Education.

PEDU-6218 Research/ Project/Thesis/Internship 3 (3+0)

This course provides students with an introduction to the research topic, research design and methodologies in the fields of sport science, physical education and recreation. Students will learn to read and interpret existing research articles, select appropriate methodologies for a researchable question, and conduct a literature review on a topic of interest. This course will also be an introduction to preparing a research proposal including selecting research methods appropriate to meet the desired outcomes of a study. Researchers within the Physical Education Research Forum aim to engage in research that enhances our understanding of what effective teaching and learning is so that current policy, practice and professional development can be improved challenged and even transformed. This course requires the student to devise, conduct, and present a project examining an applied sports science issue. The student will be expected to work mainly independently in order to gain practical experience of topic selection, research design, data collection and data analysis.

Contents

1. Introduction of Research Proposal / Thesis/ Project
2. Formulation and selecting of Research Problems
3. Selection of a topic
4. Submission of research topic
5. Changes/Corrections
6. Presentation
7. How to write an Introduction
8. Literature Review
9. Research Proposal / Synopsis Viva/ Defence

Recommended Texts

1. Thomas, J. (2015). *Research methods in physical activity.* Champaign, IL: Human Kinetics.
2. Casey, A. (2018). *Conducting practitioner research in physical education and youth sport: reflecting on practice*. Abingdon, Oxon: Routledge.

Suggested Readings

1. Veal, A. J. (2014). *Research methods in sport studies and sport management: A practical guide. London*: Routledge, Taylor & Francis Group.
2. Price, M. (2015). *Lab reports and projects in sport and exercise science: A guide for students.* London: Routledge.
3. Bell, J., & Waters, S. (2018). *Doing your research project: A guide for first time researchers*. London: McGraw-Hill Education.
4. Smith, M. F. (2018). *Research Methods in Sport.* London: Sage Publications.

PEDU-6219 Practical Athletics (Middle & Long Distance Races) 2 (0+2)

During course students will develop their running skills as well as their knowledge of the rules equipment and central form of athletics. Compose and perform their routine. Demonstrate knowledge of the principles of particular event and races, they will also develop motor skills and gain the necessary how-know for races. The basis of the knowledge athletes and coaches develop their individual reactions to different training approaches there is adaptation and transformation when training methods are displaced and enacted by different athletes. . It also provides the range of tests and techniques for testing Physical fitness, motor abilities and specific sports skills. e.g. (Reaction time, Endurance, Muscular Strength, Flexibility, Balance, Power, Speed, Agility, Coordination, Test criteria, Methods of grading etc. This paper analyses the evolution of training methods in distance running and highlights knowing as a local enactment that involved a process of displacing and transformation the importance of the cardio-vascular functions for the improvement of resistance alongside the use of message, breathing exercises, and appropriate diet.

Contents

1. Introduction/rules and regulations of middle and long distance races
2. General and specific warm-up and cool down exercises.
3. Races with different intensity
4. Resistance Training
5. Starting technique, acceleration and finishing technique.
6. Endurance training (aerobic, anaerobic and work capacity)
7. Strength training (absolute strength, general strength, elastic strength and strength endurance)
8. Speed training (absolute speed, speed endurance, optimal speed)
9. Multi pace training
10. Coordination exercises (agility, mobility, balance, technical execution)
11. Fartlek training
12. Power training
13. Introduction of periodization training
14. Importance of weight training
15. Specification to complete the middle and long distance races
16. Duties of officials and organizing committee

Recommended Texts

1. Konin, J. G., & Ray, R. (2019). *Management strategies in athletic training* (5th ed.). Champaign, IL: Human Kinetics.
2. Cleary, M., & Flanagan, K. W. (2019). *Acute and emergency care in athletic training.* Champaign, IL, Human Kinetics.

Suggested Readings

1. Cartwright, L. A., & Peer, K. (2018). *Fundamentals of athletic training* (4th ed.). kent, state university united states of america. Champaign, IL, Human Kinetics.
2. Kaufman, K. A., Glass, C. R., & Pineau, T. R. (2018). *Mindful sport performance enhancement: Mental training for athletes and coaches*. American Psychological Association.

PEDU-6120 Practical Game (Football, Basketball) 2 (0+2)

This course will enable the students to know about the different technology being used in different games and sports along with its function for the purpose of understanding the movement, identifying the mistakes and developing the sporting skills and techniques. The student will also understand difference between the maximum, basic and absolute strength. Sports help students to develop their physical skills, get exercise, make friends, have fun, learn to play as a member of a team, learn to play fair, and improve esteem. The major objective of the course games and sports to get freedom from the stress, worries. Sports and Games are mental and physical activities and contest. Moreover, it increases the immunity of the person. As it increases the blood flow in the body and makes it adaptable for exertion. Develops knowledge and appreciation of various game forms. Analyses game structures and processes. It also develop performance competency in games through experiential learning. Explores and analyses potentially positive and negative outcomes of participating in games and sport.

Contents

1. Introduction to games
2. Passing, Accuracy, Dribbling
3. Receiving, kicking, Shooting, Penalties
4. Jogging, Throwing, Heading, Volley
5. Demonstration & Presentation of Skills
6. Coaching Skills, Conducting &Officiating Skills
7. Simple Passing, Throwing, Catching, Side Pass, Chest Pass, Tip Pass
8. Dribbling with Running, Shooting Style, Layup, Setup
9. Conduct Competition
10. Demonstration & Presentation of Skills
11. Coaching Skills
12. Conducting &Officiating Skills

Recommended Texts

1. Galat, J. (2017). *Coaching youth football*. Champaign, IL: Human Kinetics.
2. Gillett, J., & Burgos, B. (2020). *Strength training for basketball*. Champaign, IL: Human Kinetics.

Suggested Readings

1. Tod, D., & Eubank, M. (2020). *Applied sport, exercise, and performance psychology: Current approaches to helping clients*. Abingdon, Oxon: Routledge.
2. Murray, R., & Kenney, W. L. (2020). *Practical guide to exercise physiology: The science of exercise training and performance nutrition*. Champaign, IL: Human Kinetics.
3. Ehrman, J. K., Liguori, G., Magal, M., &Riebe, D. (2018). *ACSM's guidelines for exercise testing and prescription* (10th ed.). Philadelphia, PA: Wolters Kluwer.
4. Konin, J. G., & Ray, R. (2019). *Management strategies in athletic training* (5th ed.). Champaign, IL: Human Kinetics.

PEDU-6221 **Practical Minor Area Games** **2 (0+2)**

Our main objective of this program seeks to emphasize the enhancement of professional abilities and skills of the students with overall leadership qualities. Through these type of practical activities and minor area games to enhance fundamental Motor Skills and their effective application in a game, basic offensive and defensive games strategies, as well as learning the importance of fair play, safe practises and cooperative involvement .We develop students' physical competence and knowledge of movement and safety, and their ability to use these to perform in a wide range of activities associated with the development of an active and healthy lifestyle. Participation in non-traditional games and activities promotes lifelong leisure, decision making, problem solving, and communication skills. We want our students will become professional in many different forms like, teachers, coaches, officials and even trainers for a gym.

Contents

1. Introduction/History of minor area games
2. Proper physical and mental activeness
3. Creative skills
4. Designing of minor area games
5. Games as medium: “Magic circle”, game rules, role of choice and challenge
6. Demonstration and presentation
7. Designed games as play: varieties of games experience (easy to difficult)
8. Games such as circle ball chase, dogging, plucking the tails, leg cricket, 2-ball soccer, backboard ball and poison tag etc
9. Combat sports and tug of war
10. Coaching skills

Recommended Texts

1. Jeffreys, I., & Moody, J. (2016). *Strength and conditioning for sports performance*. Abingdon, Oxon: Routledge.
2. Kaufman, K. A., Glass, C. R., & Pineau, T. R. (2018). *Mindful sport performance enhancement: Mental training for athletes and coaches*. American Psychological Association.

Suggested Readings

1. Pirlo, A. (2014). *Andrea Pirlo: I think therefore I play*. London: Back Page Press.
2. Zeri, F., Pitzalis, S., Di Vizio, A., Ruffinatto, T., Egizi, F., Di Russo, F., & Naroo, S. A. (2018). Refractive error and vision correction in a general sports-playing population. *Clinical and Experimental Optometry*, *101*(2), 225-236.
3. Clark, N. (2019). *Nancy Clark's sports nutrition guidebook*. (5th ed.) Champaign, IL; Human Kinetics.

PEDU-6222 Sports Bio-Mechanics 3 (3+0)

The course will provide the theoretical and experimental basis required for the application of biomechanics in the areas of sport and exercise. Biomechanics in Sports incorporates detailed analysis of sport movements in order to minimize the risk of injury and improve sports training equipment and techniques. Student and teachers will learn how to design a quantitative analysis, collect, analyse and interpret data obtained from the equipment associated with the measurement technique. From the analysis work of this course, student teachers will be expected to examine the relationship between performance measure and human motor system. The purpose of the course is to develop the student teacher's ability to conduct biomechanical analysis independently and to apply the knowledge in teaching and coaching as well as understanding of athletic performance through mathematical modelling, computer simulation and measurement, and enabling the learners/athletes to pursue their potential at highest level. Data will be collected and processed during laboratory sessions to examine relationships between displacement, velocity and acceleration, force, power, energy, impulse, momentum and fluid dynamics.

Contents

1. Introduction to Sports Bio-Mechanics
2. Forces
3. Kinematic Concepts for Analyzing Human Motion
4. Linear Kinematics for Analyzing Human Movement
5. Kinetic Concepts for Analyzing Human Movement
6. Linear Kinetics for Analyzing Human Movement
7. Angular Kinematics of Human Movement
8. Angular Kinetics of Human Movement
9. Equilibrium and Human Movement
10. Fluid Mechanism and Human Movement
11. Mechanical Analysis of competitive Sports Techniques
12. Mechanical Analysis of Track & Field Events

Recommended Texts

1. Hall, S. J. (2019). *Basic biomechanics* (8th ed.). New York, NY: McGraw-Hill Education.
2. Pangrazi, R. P., & Beighle, A. (2020). *Dynamic physical education for elementary school children* (19th ed.). Champaign, IL: Human Kinetics.

Suggested Readings

1. Bartlett, R. (2014). *Introduction to sports biomechanics: Analysing human movement patterns* (3rd ed.). Milton Park, Abingdon, Oxon: Routledge.
2. Watkins, J. (2014). *Fundamental biomechanics of sport and exercise* (1st ed.). New York: Routledge/Taylor & Francis Group.
3. Payton, C., & Burden, A. (2018). *Biomechanical evaluation of movement in sport and exercise: The British Association of Sport and Exercise Sciences guide* (3rd ed.). Abingdon, Oxon: Routledge.
4. McGinnis, P. M. (2020). *Biomechanics of sport and exercise* (4th ed.). Champaign, IL: Human Kinetics.

PEDU-6223 **Sports Nutrition** **3 (3+0)**

This course provides a scientific background of applied nutrition and sports performance. Sports Nutrition is the study of nutrition and exercise for the promotion of health, fitness and prevention from diseases. Proper nutrition is the key to optimizing health and athletic performance. This course presents guidelines for the diet needed to be ready for athletic practice and competition, and how to refuel afterwards. The course contains the principles of nutrition and reviews the role and functions of fats, proteins, carbohydrates, vitamins, minerals, body fluids, metabolism, digestion and weight management. Students will be able to learn about energy expenditure during exercise, performance enhancement recovery, and the essential elements for growth, maintenance and repair of the body's tissues. Individuals gain an understanding of exercise physiology and learn how to create a nutritional fitness plan for each sport as well as weight loss supplements and performance-enhancing drugs are also a point of emphasis. They can learn to counsel individuals and to make diet recommendations.

Contents

1. Introduction to sports nutrition
2. Energy and metabolism
3. Energy and muscular activities
4. Carbohydrates and sports performance
5. Science of carbohydrate loading
6. Fats and sports performance
7. Proteins and sports performance
8. Vitamins
9. Minerals
10. Water and Electrolytes
11. Eating Disorders
12. Weight Management
13. Body composition
14. Practical application of nutritional plan for strength/power athletes
15. Practical application of nutritional plan for endurance /ultra-endurance athletes

Recommended Texts

1. Bean, A. (2017). *The complete guide to sports nutrition* (8th ed.). London: Bloomsbury Sport, an imprint of Bloomsbury Publishing Plc.
2. Fink, H. H., & Mikesky, A. E. (2020). *Practical applications in sports nutrition* (5th ed.). Burlington, MA, New Jersey: Jones & Bartlett Learning.

Suggested Readings

1. Souza, P. D. (2016). *Sports nutrition* (1st ed.). New York: Syrawood Publishing House.
2. Baechle, T. R. (2016). *Essentials of strength training and conditioning* (4th ed.). Champaign, IL: Human Kinetics.
3. Spano, M. A., Kruskall, L. J., & Thomas, D. T. (2018). *Nutrition for sport, exercise, and health* (3rd ed.). Champaign (Illinois): Human Kinetics.
4. Jeukendrup, A. E., & Gleeson, M. (2019). *Sport nutrition* (4th ed.). Champaign, IL: Human Kinetics.

PEDU 6224 **Sports Injuries & Rehabilitations** **3 (3+0)**

This course is a graduate level course of M.Sc. Physical Education. The subject covers a broad range of topics. It building knowledge and skills to understand injuries, injuries classification, identification, CPR, First Aid, emergency and acute injuries management. Prevention and implementation of suitable exercise based rehabilitation programs designed by health care professionals for players and common people to regain their peak performance potential either independently or by assisting healthcare professionals. It helps students to manage the injuries through appropriate exercises and various therapies. The subject will enable students to analyse the posture and prescribe exercises to correct various posture deformities. Students will also be able to classify special population. In-depth study of this subject will help students, coaches, and researchers to understand how human body reacts to physical or recreational activity, exercises and sports, they can help participants, whether at an elite level or within the general community, to regain their peak potential after injury occurrence.

1. Introduction to Sports Injuries
2. Classification
3. Methods of Injuries Prevention
4. Warm up, Cool down & First Aid
5. Management of Injuries
6. Exercise, Yoga, Hydro, Steam, Cryo and Physiotherapy
7. Posture Analysis
8. Adapted Physical Activities
9. Sports Massage

Recommended Texts

1. Joyce, D., & Lewindon, D. (2016). *Sports injury prevention and rehabilitation: integrating medicine and science for performance solutions*. London, UK: Routledge.
2. Brukner, P., & Khan, K. (2019). *Brukner & Khans Clinical sports medicine* (5th ed.). Sydney, Australia: McGraw Hill Education.

Suggested Readings

1. Mc Gillicuddy, M. (2011). *Massage for sport performance*. Champaign, IL: Human Kinetics.
2. Knopf, K. G. (2015). *Injury rehab with resistance bands: complete anatomical information and rehabilitation routines for back, neck, shoulders, elbows, hips, knees, ankles and more.* Berkeley, CA: Ulysses Press.
3. Houglum, P. A. (2016). *Therapeutic exercise for musculoskeletal injuries* (4th ed.). Champaign, IL: Human Kinetics.
4. Winnick, J. P., & Porretta, D. L. (2017). *Adapted physical education and sport* (6th ed.). Champaign, IL: Human Kinetics.
5. Walker, B. (2018*). The anatomy of sports injuries: your illustrated guide to prevention, diagnosis, and treatment* (2nd ed.). Chichester, England: Lotus Pub.

PEDU-6225 Research/ Project/Thesis/Internship 3 (3+0)

This course provides students with an introduction to the research topic, research design and methodologies in the fields of sport science, physical education and recreation. Students will learn to read and interpret existing research articles, select appropriate methodologies for a researchable question, and conduct a literature review on a topic of interest. This course will also be an introduction to preparing a research proposal including selecting research methods appropriate to meet the desired outcomes of a study. Researchers within the Physical Education Research Forum aim to engage in research that enhances our understanding of what effective teaching and learning is so that current policy, practice and professional development can be improved challenged and even transformed. This course requires the student to devise, conduct, and present a project examining an applied sports science issue. The student will be expected to work mainly independently in order to gain practical experience of topic selection, research design, data collection and data analysis.

Contents

1. Introduction of Research Proposal / Thesis/ Project
2. Formulation and selecting of Research Problems
3. Selection of a topic
4. Submission of research topic
5. Changes/Corrections
6. Presentation
7. How to write an Introduction
8. Literature Review
9. Research Proposal / Synopsis Viva/ Defence

Recommended Texts

1. Grattan, C., & Jones, I. (2010). *Research methods for sports studies* (2nd ed.).New York: Routledge.
2. Thomas, J. (2015). *Research methods in physical activity.* Champaign, IL: Human Kinetics.
3. Casey, A. (2018). *Conducting practitioner research in physical education and youth sport: reflecting on practice*. Abingdon, Oxon: Routledge.

Suggested Readings

1. Veal, A. J. (2014). *Research methods in sport studies and sport management: A practical guide. London*: Routledge, Taylor & Francis Group.
2. Price, M. (2015). *Lab reports and projects in sport and exercise science: A guide for students.* London: Routledge.
3. Bell, J., & Waters, S. (2018). *Doing your research project: A guide for first time researchers*. London: McGraw-Hill Education.
4. Smith, M. F. (2018). *Research Methods in Sport.* London: Sage Publications.

PEDU-6226 **Practical Athletics (Throwing Events)** **2 (0+2)**

The two primary forms are throwing for distance and throwing at a given target or range. The four most prominent throwing for distance sports are in track and field: shot put, discus, javelin, and the hammer throw. This course will Develop and share among members and others education, information, and leadership skills. Encourage members to promote the active participation by all youth in fun and healthy physical activities according to their interests and abilities. The training for this course is event group focused. The main focus of this course is annual planning periodization and is introduction to international competition. This course aims to development of the student biomechanics physiology psychology nutrition planning and strength concepts. Better understand of a course the participant will for the target age group this course have a greater knowledge of appropriate drills, skills, games and activities for each event. Identify some of the more common technical faults associated with each event this course have a basic understanding of a simple Coaching session.

Contents:

1. Introduction to Throwing Events
2. Javelin throw
3. Preparing for Acceleration
4. Crossover
5. Begin the Throw, Complete the Throw
6. Hammer throw
7. Releasing Angle and Velocity
8. Discus throw
9. Drills used to teach the grip and release ,Wind up, Starting the Throw
10. Body position, Throwing from the power position, Drills used to teach throwing from the power position
11. Beginning the Turn to the Center of the Ring, Completing the Turn to the Center of the Ring, Turn to the Power Position, Power Position, Release angle
12. Shot-put
13. Drills used to teach the grip and release ,Wind up, Starting the Throw
14. Body position, Throwing from the power position, Drills used to teach throwing from the power position

Recommended Texts

1. McGinnis, P. M. (2020). *Biomechanics of sport and exercise* (4th ed.). Champaign, IL: Human Kinetics.
2. Fink, H. H., &Mikesky, A. E. (2020). *Practical applications in sports nutrition* (5th ed.). Burlington, MA, New Jersey: Jones & Bartlett Learning.

Suggested Readings

1. Bartlett, R., & Bussey, M. (2013). *Sports biomechanics: Reducing injury risk and improving sports performance*. (2nd ed.). United States. Routledge.
2. Cartwright, L. A., & Peer, K. (2018). *Fundamentals of Athletic Training* (4th ed.). Champaign, IL; Human Kinetics

PEDU-6227 Practical Games (Table Tennis & Badminton) 2 (0+2)

The student will know the basics of Badminton and table tennis games. To acquire the basic knowledge need to analyze skills required with perspective of teaching, coaching, healthy life style, Physical fitness. This course will Develop and share among members and others education, information, and leadership skills. Encourage members to promote the active participation by all youth in fun and healthy physical activities according to their interests and abilities. The course aims to provide students with opportunities to acquire the knowledge, understanding and experience necessary to develop an appreciation of, and play, the sport of badminton and table tennis. Students will be taught the essential skills necessary to play the sport. This unit plan is an outline of our four lesson badminton and table tennis unit. Make a forehand shot, aiming for one of the hoops on the ground; the retriever will gather the birdies back to the feeder. Teacher demo first, and then students can follow along.

Contents

1. Introduction, Ready Position
2. The grip, Racket angles
3. Basic ball control, Basic strokes
4. Backhand push, Forehand drive
5. Backhand drive, Forehand push
6. Return of service
7. Footwork Patterns, Service rules
8. Duties of officials & organizing committees
9. Basic Gripping Technique. Learn how to hold your racket using the forehand and backhand grip
10. Basic Footwork. Good footwork allows good movement around the court
11. Strokes are simply your swing action to hit the shuttle Badminton Serve
12. Basic Stance, Defensive High Clear/lob
13. Drop Shots, Smashing
14. Basic Fouls of Badminton
15. Basic Trainings of Badmintons
16. Duties of officials & organizing committees

Recommended Texts

1. Wagner, H., Pfusterschmied, J., Von Duvillard, S. P., & Müller, E. (2012). *Skill-dependent proximal-to-distal sequence in team-handball throwing. Journal of Sports Sciences*, 30(1), 21-29
2. Azar, F. M. (2019). *Illustrated tips and tricks in sports medicine surgery* (1st ed.). Philadelphia: Wolters Kluwer.

Suggested Readings

1. Joyce, D. (2014). *High-performance training for sports* (2nd ed.). Champaign, IL: Human Kinetics.
2. Prentice, W. E. (2017). *Principles of athletic training: A competency-based approach* (16th ed.). Vancouver, B.C.: Langara College.

PEDU-6228 **Practical Hiking / Hill Trekking** **2 (0+2)**

This course is designed to give the students a better understanding of the fundamental knowledge needed to enjoy hiking safely. Students will experience a lifelong activity that promotes a healthy and active lifestyle. The assumption that lifestyles formed early in life track into adulthood has been used to justify the targeting of health promotion programmes towards children and adolescents. The aim of the current study was to use data from the Northern Ireland Young Hearts Project to ascertain the extent of tracking, between adolescence and young adulthood, of physical activity, aerobic fitness, selected anthropometric variables, and diet. Tracking has been defined as the maintenance of relative position in rank of behaviour over time, such that subjects who rank highly for unfavourable risk profiles at a young age are likely to maintain their ranks through into adulthood. Although different indicators of physical activity and different methods of tracking of inactivity is less often studied. Youth resistance training: updated position statement paper from the national strength and conditioning association.

Contents

1. Introduction of Hiking & Hill Tracking
2. Fitness training for hiking
3. Personal awareness and safety when hiking (communication, emergency plans)
4. Hiking techniques (posture, overcoming obstacles, use of trekking poles)
5. Equipment and proper use
6. Apply safe hiking techniques during hiking activities
7. Maps and Navigations
8. Hiking trip planning (route selection, proper gear, clothing, footwear, first aid, food, water)
9. Alter hiking choices for special weather and physical conditions
10. Self-reflection and communication about hiking activities, routes, personal preparation, group dynamics, safety, and fitness for hiking
11. Tying Knots Skills Charts
12. Environmental awareness
13. Introduction of wildlife animals and Tracks
14. Remedies for Insect Bites and Rashes
15. Basic injury prevention and first aid (blister prevention and management)

Recommended Texts

1. Smith, S. D. (2017). *White Mountain guide: AMC's comprehensive guide to hiking trails in the White Mountain National Forest* (30th ed.). Boston: Appalachian Mountain Club Books.
2. KJ, P. (2019). *Base camp Denver: 101 hikes in Colorado's Front Range* (3rd ed.). Las Vegas, NV: Imbrifex Books.

Suggested Readings

1. Skurka, A. (2017). *The ultimate hiker's gear guide: Tools & techniques to hit the trail* (2nd ed.). Washington, D.C.: National Geographic
2. Konin, J. G., & Ray, R. (2019). *Management strategies in athletic training* (5th ed.). Champaign, IL: Human Kinetics.