

CURRICULUM
OF
HEALTH AND PHYSICAL
EDUCATION
BS/MS & MPHIL

(Revised 2014)



HIGHER EDUCATION COMMISSION
ISLAMABAD

CURRICULUM DIVISION, HEC

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PREFACE

The curriculum, with varying definitions, is a plan of the teaching-learning process that students of an academic programme are required to undergo. It includes objectives and learning outcomes, course contents, scheme of studies, teaching methodologies and methods of assessment of learning. Knowledge in all academic disciplines is expanding and even new disciplines are also emerging, it is imperative that curriculum are developed and revised regularly.

University Grants Commission (UGC) was designated as the competent authority to develop, review and revise curricula beyond Class-XII vide Section 3, Sub-Section 2 (ii), Act of Parliament No. X of 1976 titled “**Supervision of Curricula and Textbooks and Maintenance of Standard of Education**”. With the repeal of UGC Act, the same function was assigned to the Higher Education Commission (HEC) under its Ordinance of 2002, Section 10, Sub-Section 1 (v).

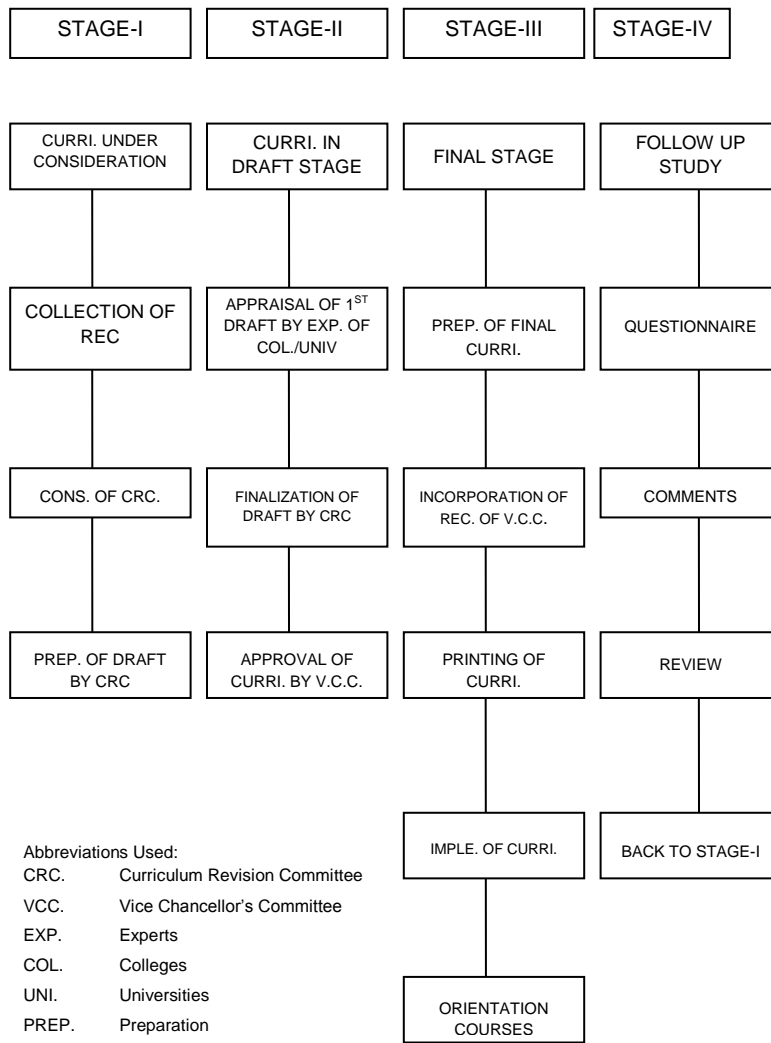
In compliance with the provisions, the Curriculum Division of HEC undertakes the revision of curricula after every three years through respective National Curriculum Revision Committees (NCRCs) which consist of eminent professors and researchers of relevant fields from public and private sector universities, R&D organizations, councils, industry and civil society nominated by their organizations.

In order to impart education at par with quality international standards, HEC NCRCs have developed unified templates as guidelines for the development and revision of curricula in the disciplines of Basic Sciences, Applied Sciences, Social Sciences, Agriculture and Engineering in 2007 and 2009.

It is hoped that this curriculum document, prepared by the respective NCRC's, would serve the purpose of meeting our national, social and economic needs, and it would also provide the level of competency specified in Pakistan Qualification Framework to make it compatible with international educational standards. The curriculum is also placed on the website of HEC (www.hec.gov.pk).

(Fida Hussain)
Director General (Academics)

CURRICULUM DEVELOPMENT PROCESS



MINUTES OF THE FINAL MEETING OF NCRC IN HEALTH AND PHYSICAL EDUCATION

The final meeting of the National Curriculum Revision Committee (NCRC) was held on 7-9th May, 2014 in the Committee Room of HEC Regional Center, Peshawar, to develop unified, comprehensive and standardized curriculum for BS (4-years) and MPhil/MS (Sport Sciences & Physical Education). Prof. Dr. Abdul Waheed Mughal, (**Convener**) Dean, Faculty of Arts, Social Sciences & Education, Sarhad University of Science & Information Technology, Peshawar chaired the meeting. The Following were present in the meeting:

S.No	Name and Address	Status
1	Prof. Dr. Abdul Waheed Mughal, Dean, Faculty of Arts, Social Sciences and Education, Sarhad University of Science & Information Technology, Peshawar (K-P)	Convener
2	Prof. Dr. Salahuddin Khan, Professor /Chairman, Department of Sports Science & Physical Education, Gomal University, D. I. Khan	Secretary
3	Syed Zain-ul-Abedin, Director of Sports / Physical Education, Department of Sports, Azad Jammu & Kashmir University, Muzaffarabad.	Member
4	Mr. Najeeb-ur-Rehman Channa, Director Sports, Mehran University of Engineering & Technology, Jamshoro, Sindh.	Member
5	Mr. Farooq Hussain, HOD/Lecturer/Director Sports Department of Physical Education & Sports, Abdul Wali Khan University, Mardan.	Member
6	Dr. Basit Ansari, Assistant Professor / In-charge, Department of Health & Physical Education, University of Karachi, Karachi.	Member
7	Mr. Zainullah Janan, Director Sports, University of Baluchistan, Quetta.	Member
8	Mr. Muhammad Iqbal, Director Sports/HOD Department of Health & Physical Education, Hazara University, Mansehra.	Member

9	Mr. Muhammad Atif Shafiq, Lecturer, Department of Physical Education, GC University, Lahore.	Member
10	Mrs. Tabassum Abbas, Assistant Professor Government College Township, Lahore	Member
11	Mr. Akhlaq Ahmed Khan, Deputy Director Sports, Physical Education & Sports Sciences, University of Gujrat, Gujrat.	Member
12	Mr. Saeed Akhter , HOD Physiotherapy, Institute of Physical Medicine & Rehabilitation Centre, (OJHA Campus), Dow University of Health Sciences, Karachi.	Member
13	Dr. Ejaz Asghar, Associate Professor/Chairman, Department of Physical Education & Sports Sciences, Riphah International University, Faisalabad.	Member
14	Mr. Badar Habib, Lecturer, The Islamia University of Bahawalpur	Member

The meeting started with the recitation from the Holy Quran by Mr. Zainullah Janan. Director General (Academics), HEC, welcomed the participants and requested them to present their brief introduction. After formal introduction, the Director General (Academics) briefed the participants about the importance of such gatherings which has the aim to improve the educational standards in the country and also contribute towards social uplift of the society and betterment of the student community. He added that holding of such meetings in other subjects, is a regular feature of HEC, and it is the responsibility of all the experts/educationists to realize its importance and contribute effectively to this national cause, by incorporating the latest trends and demands of their relevant subjects. He also asked the members to recommend/submit curriculum based training workshop proposals in Sports Sciences & Physical Education in all four provinces and AJK to create awareness regarding changes/modifications made in the curricula during the three-day meeting.

After detailed guideline delivered by Director General (Academics), the Committee, thoroughly discussed the courses, their credit distribution and

contents for both BS (4-years) and MS-Sports Sciences (2-years) Programs.

Since, Mr. Javaid Akhtar (Former Secretary) elected during the last meeting of NCRC held at Lahore could not attend the meeting due to his pre-occupation, the members unanimously requested Prof. Dr. Salahuddin Khan to act as Secretary of the committee.

After three days of intensive and detailed discussion, the committee finalized the courses/contents recommending latest books for all the subjects. It is pertinent to mention here that different sub-committees were formed unanimously, who were given the task to revise different subjects of their respective areas/fields. The intensive work done by different specialized Committees were appreciated by all the members.

One of the major outcomes of three days deliberations was to broaden the scope of practical classes of Physical Education, by spreading the practical work in four semesters which was earlier confined to only one semester. This proposal/recommendation was widely hailed by all the members.

After discussion and detailed deliberation, the committee unanimously made following recommendations for BS (4 years) and MS (2 years) programs.

Recommendation for BS (4 years)

- Teacher, being the key person in the learning process, it is imperative that he/she should be aware of the latest developments in the field of Sports and Physical Education. In order to ensure the implementation of the suggestion, it is strongly recommended that Higher Education Commission may hold refresher courses in coordination with Pakistan Sport Board/National Council for Health & Physical Education & Sport Sciences of Pakistan (NCPRESS), regularly.
- Higher Education Commission may provide financial assistance to ensure the implementation of BS (4-years) Programs throughout the country.
- The linkage in both teaching and research disciplines needs to be encouraged between the universities and sports departments.
- To implement the BS (4-Years) program, the Government and Universities need to provide additional facilities for teaching extra courses and for provision of latest equipment.
- The Provinces need to be involved at the highest level for the implementation of BS (4-Years) program.

- Current Nomenclature of Physical Education discipline may be changed/replaced by Sports Sciences and Physical Education instead of Health and Physical Education, as being used globally.
- The committee unanimously resolved that HEC may arrange meetings of the said Committees at least after two years to review the courses and problems faced by the departments during the running semesters.
- The committee also strongly recommended that the changes which are made in the practical duration may be communicated to the concerned quarters for implementation.

For M.Phil/MS (2-years) program the following recommendations were made:

Prof. Dr. Abdul Waheed Mughal presented a Scheme of Studies for MS Sports Sciences and Physical Education being implemented in SUIT, approved by its competent statutory bodies in accordance with the prevailing HEC guidelines, covering all aspects of eligibility, duration, core/optional courses, marks distribution, etc. The proposed scheme of studies of MS Program was appreciated by all the committee members and recommended for adoption by HEC, which is being forwarded to HEC for further implementation. The committee also recommended the following:

- The Committee unanimously proposed maximum new subjects for MS/MPhil course work as guidelines for the universities offering MS/MPhil Sports Sciences Programs in Physical Education.
- Research, being an important component of the MS/MPhil Programs be given due importance and the HEC may provide all possible assistance to the newly established departments of Physical Education in the universities of different provinces and AJK, imparting such education.
- More opportunities of trainings, refresher courses, workshops, etc; be given to the faculty members of the universities offering M. Phil Programs and HEC may extend maximum support in realizing the above objectives.
- Efforts should be made to build working relationship among the sister universities offering the research programs in same filed.
- A mechanism should be developed to bring uniformity among the departments offering MS/MPhil Programs through HEC.

- Research labs and testing centers be established in all the universities offering post graduate programs in sports sciences and Physical Education for which the finance expenditure may be provided on matching grant basis.
- The HEC may arrange visits of teaching faculty holding PhD degree in sports sciences and Physical education from developed countries for two to three weeks' time to deliver lectures in their respective fields. The visiting faculty members then be deputed in all four or five universities offering post graduate program in sports sciences.
- The HEC may also facilitate these institutions by Research Journal Eboels related to sports sciences at HEC digital Library to promote research opportunities.
- The HEC may also seek the opportunities/avenues for Faculty Exchange program in sports sciences with renowned International Universities.

General

In this regard, the committee proposed that the NCRC members belonging to different provinces may be incorporated for organizing training workshops in their respective fields.

The Committee during the session unanimously constituted a Council for Health, Physical Education and Sports Sciences of Pakistan (NCPSS) and selected Dr. A. Waheed Mughal as its President; Dr. Salahuddin Khan, as its Convener, Dr. Ejaz Asghar, as its Secretary, and Mr. Farooq Hussain as its Treasurer, along with all other members of NCRC, as its founder Executive Members.

The NCRC recommended to the HEC that the above Council may please be provided with necessary guidelines to get the body registered with the relevant authorities through HEC.

The Committee also thanked Mr. Zaheer Ahmed Awan Mr. Rizwan Shoukat Mr. Abid Khan for their personal interest and efforts to make the meeting successful.

The meeting, later on, ended with a vote of thanks from and to the chair.

OBJECTIVES

In the era of educational revolution main objective of the BS 4-Years program in Health & Physical Education is to prepare graduates having a deep knowledge of the subjects as well as ability to analyze in a given situation and draw out conclusion. The primary aim of the program is to produce broad base graduates able to face the challenges of the modern world.

The educational objectives of BS 4-Year program are:

1. The program in Health & Physical Education is designed to produce the graduates having a sound knowledge of the theoretical and practical subject matter.
2. Along with the knowledge of the subject they would also have a broader view of other disciplines of social as well as physical sciences. It will enable the students to interact with other branches of knowledge and strengthen their understanding of the society.
3. The graduates are equipped with essential tools and techniques of research. It will enable them to analyze any given situation / issue and suggest its possible solutions.
4. The graduates are to be empowered to establish and develop a viable and forceful line between theory / concepts and practice in the field of Health and Physical Education.
5. The collective efforts behind this course are to create cohesiveness among the institutions and personnel of sports and physical education.
6. The similarity among the outlines has been developed to interrelate the discipline in the global perspective creating an environment of healthy competition and equal opportunities for all at national and international level.

**SCHEME OF STUDIES FOR BS (4YEAR) IN
HEALTH & PHYSICAL EDUCATION**

Semester	Name of Subject	Credits
First	English I (Compulsory 1)	3+0
	Pakistan Studies (Compulsory 2)	2+0
	Mathematics I (Compulsory 3)	3+0
	Fundamental Application of Physics (General 1)	3+0
	Philosophical basis of Physical Education (Foundation 1)	3+0
	Games-I	2-1
	Athletics-I	1+1
		17+2
Second	English II (Compulsory 4)	3+0
	Islamic Studies / Ethics (Compulsory 5)	2+0
	Mathematics II / Univ. Optional (Compulsory 6)	3+0
	Biochemistry (General 2)	3+0
	Sports Biomechanics (Foundation 3)	2+1
	Athletics-II	0+1
	Games-II	1+1
	Gymnastic-I	0+1
	14+4	
Third	English III (Compulsory 7)	3+0
	Introduction to Computer (Compulsory 8)	3+0
	Talent Identification in Sports	3+0
	Games-III	0+2
	Basics of Human Anatomy (Foundation 6)	2+1
	Athletics-III	0+1
	Gymnastics-II	0+1
		11+5
Fourth	English IV/ Univ. Optional (Compulsory 9)	3+0
	Introduction to modern technologies (General 4)	3+0
	Sociology (General 5)	2+0
	Administration and Management in Sports (Foundation 7)	3+0
	Basics of Human Physiology (Foundation 8)	2+1

	Practical Athletics-IV	0+1
	Games-IV	0+2
		13+4
Fifth	Science of Sports Training (Major 1)	3+0
	Environmental Sciences (General 6)	3+0
	Physical Education for Special population (Elective 1)	3+0
	Sports Nutrition (Major 2)	3+0
	Introduction to Statistics (General 7)	3+0
		15+0
Sixth	Specialization in one group of track and field (Elective 4)	1+2
	Research Methodology in Physical Education (Major 3)	3+0
	Planning Sports Facilities (Foundation 9)	3+0
	Test, Measurement & Evaluation in Phy: Edu: & Sports (Major 4)	3+0
	Sports Psychology (Major 5)	3+0
	Practical (Teaching Practice)	0+2
		13+4
Seventh	Common Sports Injuries, Treatment & Rehabilitation (Major 6)	3+0
	Exercise Physiology (Major 7)	2+1
	Role of Media in Sports (Elective 3)	3+0
	Scientific Sports Coaching (Foundation 10)	3+0
	Specialization in one game (Elective 2)	1+2
	Research Proposal	1+0
		13+3
Eighth	Sports Medicine (Major 8)	3+0
	Curriculum Development in Physical Education (Major 9)	3+0
	Adapted Physical Education (Major 10)	3+0
	Research Thesis/Research Project	6+0
		15+0

1 Cr.hr of Lab. / Practical = 3 Academics / Contact Hours

DETAILS OF COURSES

TITLE OF COURSES

SOCIOLOGY

(2+0 Cr. Hr)

OBJECTIVES OF COURSE

This course will bring awareness in students about the general sociological perspectives and understanding about the various levels of interactions in society through sports. Further, they will understand the interaction occur in sports activities and further will help in the origination of sports and in the resolution of various conflicts. In addition to the various other objectives, this course will specifically improve the moral and ethical background and will help in better socialization and personality development.

COURSE CONTENTS

- i. **INTRODUCTION**
 - a. Introduction to Sociology
 - b. Its meaning, scope and significance
 - c. Current trends of sociology
- ii. **SPORTS AND SOCIETY**
 - a. Definitions
 - b. Types of societies and cultures
 - c. Development of youth sports
 - d. The role of sports in the development of individual and society
- iii. **DEVIANCE AND SOCIAL CONTROL IN SPORTS**
 - a. Definition of deviance and social control
 - b. Types and approaches of deviance
 - c. Social control through sports
- iv. **VIOLENCE AND SPORTS**
 - a. Violence in a sociological perspective
 - b. The psychology of violence
 - c. Violence in sports
 - d. Violence on and off the field
 - e. Violence among the spectators
 - f. The role of sports to control the violence

- v. **SPORTS AND SOCIALIZATION**
 - a. Definitions
 - b. Theories and agencies of socialization
 - c. Politics in Sports
 - d. Political instability and Sports

- vi. **SPORTS AS SOCIAL INSTITUTION**
 - a. Definition of social institution
 - b. Sports and family
 - c. Sports and religion
 - d. Sports and education
 - e. Sports and economic
 - f. Sports as a recreational

- vii. **SPORTS PROBLEMS**
 - a. The social problems in sports
 - b. Poverty, Illiteracy and sports
 - c. Unemployment and sports
 - d. Remedies and solution of social problems through sports

RECOMMENDED BOOKS

1. Dr. Anwar Alam 2005, *Principles of Sociology*, Department of Sociology, University of Peshawar.
2. *Sociology-1* by Allama Iqbal Open University.
3. *Sociology-II* by Allama Iqbal University.
4. Paul B. Horton, Chesler L. Hunt (1994). *Sociology*, McGraw-Hill.
5. Vander Zindan, 1995 the *Social Experience*, McGraw-Hill.

PHILOSOPHICAL BASIS OF PHYSICAL EDUCATION (3+0 Cr. Hr)

OBJECTIVES OF COURSE

This course is designed to acquaint students with the objectives to make them understand the basic concepts of physical education and its relation to Health Education, and provide preliminary awareness about physical, mental and social developments; interpretation of biological, psychological effects on physical activities.

COURSE CONTENTS

- i. INTRODUCTION**
 - a. Historical background of Physical Education
 - b. Definition and scope of Physical Education
 - c. Aims and objectives of Physical Education

- ii. PHILOSOPHY AND PHYSICAL EDUCATION**
 - a. Definition
 - b. Components of Philosophy
 - c. Relationship of Physical Education with Naturalism, Idealism, Realism, Pragmatism, Existentialism

- iii. PHYSICAL EDUCATION AS DISCIPLINE**
 - a. Physical Education, an academic discipline
 - b. Physical Education and Islam
 - c. Physical Education as a profession

- iv. SCIENTIFIC FOUNDATION OF PHYSICAL EDUCATION**
 - a. Biological interpretation of Physical Education
 - b. Psychological interpretation of Physical Education
 - c. Sociological interpretation of Physical Education

- v. PHYSICAL EDUCATION AND RECREATION**
 - a. Definition of Recreation
 - b. Types of Recreation
 - c. Principles of Leisure
 - d. Outdoor pursuits

- vi. LEADERSHIP IN PHYSICAL EDUCATION**
 - a. Definition and kinds of leadership
 - b. Selection criteria of leader
 - c. Qualities of a good leader
 - d. Challenges in Physical Education profession

RECOMMENDED BOOKS

1. Dr. A. Waheed Mughal, *Philosophical Basis of Physical Education*, Islamabad 2012.
2. Shamsad Ahmed. *Education in Physical Education*. New Delhi: Isha Books, 2005.
3. Syal, Meenu. *Physical Education Sports and Games*. New Delhi: Sports Publication, 2005.
4. Davis, M.B. *Physical Training in School*. New Delhi: Sport Publication, 2004.
5. Shekar, C.K. *Foundation of Physical Education and Sports*. New Delhi: Khel Sahitya Kendra, 2004.
6. Jain, Anoop. *Physical Education Foundation*. New Delhi: Sports Publication, 2003.
7. Jain, D. *Physical Education for Secondary School Children*. New Delhi: Khel Sahitya Kendra, 2003.
8. Gupta, A. K. *Facts and Foundation in Physical Education*. New Delhi: Sports Publication, 2003.
9. Seefeld, E.A. *Physical Education for Children*, New Delhi: Sports Publication, 2002.
10. Charles A. Bucher, *Foundation of Physical Education Exercise Sciences & Sports*, 14th Edition, 2003. McGraw Hill, New York

RULES AND TECHNIQUES OF GAMES

(2+2 Cr. Hr)

OBJECTIVES OF COURSE

This course is aimed at developing the knowledge of students about rules of the sports & games along with the coaching skills of different sports among the students. The course will enhance the organizational skills in the students and knowledge regarding organization and conduct of tournament at school, college, university and National levels. It will also help the students to develop discipline, sportsmanship and polish their leadership qualities.

COURSE CONTENTS

- i. INTRODUCTION**
 - a. Definition of Games and Sports
 - b. Types of Games and Sports
 - c. Values of Games and Sports
- ii. SYSTEMS OF TOURNAMENT**
 - a. Single elimination or knockout system
 - b. Round robin or league system
 - c. Combination system
 - d. Challenge system
 - i. Ladder system
 - ii. Pyramid system
- iii. ORGANIZATION AND CONDUCT OF TOURNAMENTS**
 - a. Board level
 - b. University level
 - c. Provincial level
 - d. National level
- iv. HISTORY, RULES AND TECHNIQUES OF GAMES (RACKET)**
 - a. Badminton
 - b. Tennis
 - c. Squash
 - d. Table Tennis
- v. HISTORY, RULES AND TECHNIQUES OF GAMES (BALL GAMES)**
 - a. Basket Ball
 - b. Net Ball
 - c. Volleyball
 - d. Handball

- vi. **HISTORY, RULES AND TECHNIQUES OF GAMES (FIELD GAMES)**
- a. Foot Ball
 - b. Hockey
 - c. Cricket

RECOMMENDED BOOKS

1. Dr. A. Waheed Mughal Rules and Techniques of Games, Islamabad-2012.
2. Malik Asif, *Rules of Games*, 2007, Iqra Publisher Nowshera, K-P, Pakistan.
3. Marshal Cavendish, *Encyclopedia of Sports*
4. *Rules of Games by Nora Roberts, Green Earth Books USA 2014. ISBN-139881480588103*
5. *Rules of the Game by Neil Strauss 2013*
6. *Law of Game 2013-14 by FIFA International*

BASICS OF HUMAN ANATOMY

(3+0 Cr. Hr)

OBJECTIVES OF COURSE

The outlines of this course has been drawn with the objective to provide basic knowledge of human anatomy and body parts such as head and neck, thorax, abdomen and pelvis, Skeleton, Bones Tissues, Joints and Muscles to acquaint students with initial information about human body structure and functions.

COURSE CONTENTS

- i. INTRODUCTION**
 - a. Definition of Anatomy
 - b. Importance of Anatomy in Sports
 - c. Terms & terminologies used in Anatomy

- ii. CELL**
 - a. Structure of Cell
 - b. Functions and Characteristics of Cell
 - c. Cell division

- iii. TISSUES AND ORGANS**
 - a. Definition
 - b. Types

- iv. ANATOMY OF SKELETAL SYSTEM**
- v. ANATOMY OF MUSCULAR SYSTEM**
- vi. ANATOMY OF DIGESTIVE SYSTEM**
- vii. ANATOMY OF CARDIOVASCULAR SYSTEM**
- viii. ANATOMY OF NERVOUS SYSTEM**

RECOMMENDED BOOKS

1. Saladin, K.S. *Anatomy & Physiology*. 3rd Edition New York: McGraw-Hill, 2004.
2. Seeley, Rod. R. *Anatomy & Physiology* 7th Edition 2006, McGraw Hill, New York
3. Chaurasia, B.D. *Human Anatomy*. 4th Edition. New Delhi: CBS, 2004.
4. Marieb, E.N. Human. *Anatomy and Physiology*, 4th Edition New York: Benjamin, 2004.
5. Elaine N. Marieb. *Human Anatomy & Physiology*, The Benjamin/Cummings Publishing Company, USA, 2002.

TRACK AND FIELD

(2+2 Cr. Hr)

OBJECTIVES OF COURSE

The main purpose of this course is to enhance the knowledge of the students regarding Track & Field. This course will also be helpful in developing the skill of the students regarding the marking, and laying out of standard track and other circles. The students will be able to conduct the track and field competitions at various levels as well as to perform the duties of Technical officials.

COURSE CONTENTS

- i. HISTORY OF ANCIENT OLYMPIC GAMES WITH SPECIAL REFERENCE TO TRACK & FIELD**
 - a. Brief History
 - b. Terms and condition for participation
 - c. Programme of activities
 - d. The Olympic Flame
 - e. The Decline of the Games

- ii. HISTORY OF MODERN OLYMPIC GAMES WITH SPECIAL REFERENCE TO TRACK & FIELD**
 - a. The History behind the Modern Olympic Games
 - b. List of the countries organize Olympic games
 - c. Special features/detail of all time athletes
 - d. The Olympic Oath
 - e. The Olympic Hem
 - f. IOC (international Olympic committee)

- iii. LAYING OUT 200m & 400m TRACK STRAGERS**

- iv. CONDUCT OF TRACK AND FIELD EVENTS**
 - a. Preparation of Track and Field competition program (Board, University, Province, National)
 - b. Formation of committees for Track and Field competition

- v. OFFICIALS AND THEIR DUTIES IN TRACK AND FIELD COMPETITION**

- vi. RULES AND TECHNIQUES OF TRACK EVENTS**

- vii. RULES AND TECHNIQUES OF FIELD EVENTS**

- viii. RULES OF CROSS COUNTRY**

- ix. RULES OF WALK-RACE**

- x. DECATHLON, AND PENTATHLON (COMBINED EVENTS)**

RECOMMENDED BOOKS

1. Dr. A. Waheed Mughal, Olympics Games & Athletics, Islamabad, 2012
2. Ch: Hashmat Ali, Olympics and Athletics, Lahore.
3. M. Shafiq History of the Olympic Games with special reference to Athletics, Faisalabad
4. Dr. Abdul Whaeed Mughal, Athletics Skill and Officiating, Islamabad, 2012.
5. John Heaton, Better Athletics field, Kay Ward Ltd. London, 1986.
6. Amateur Athletics Association, Hand Book, 2009.
7. How to organize an Athletics Meet. Amateur Athletics Association Hand Book.
8. IAAF (2005). IAAF Hand Book: International Amateur Athletics Federation.

ROLE OF MEDIA IN SPORTS

(3+0 Cr. Hr)

OBJECTIVES OF COURSE

Media being a powerful institution is playing very effective role in every walks of life. It is playing an important role in the propagation of sports and brining the masses closer to the glamour of sports. The course will meet the need to bring the students at home with the role of media in the mobilization of sports for the national cohesion and boasting the economy of the country through the sports as an industry. This course will help to understand the present and future trends in sports and their implications upon the national development.

COURSE CONTENTS

- i. INTRODUCTION**
 - a. Types and Characteristics of Media
 - b. Role of Media in Globalizations of Sports
 - c. Mobilization through Media

- ii. SPORTS AND MEDIA**
 - a. The Professions of Sports Journalism
 - b. Sports writing and Journalism
 - c. Sports Broadcasting
 - d. Sports Photography
 - e. Careers in Sports Media

- iii. MEDIA AND INTERNATIONAL COMPETITION/GAMES (OLYMPIC, COMMONWEALTH, ASIAN AND REGIONAL GAMES)**
 - a. The Press Commission and Radio Commissions
 - b. Facilities and Services at the games
 - c. News and Entertainment

- iv. SPORTS ADVERTISEMENT**
 - a. Sports General
 - b. Sports Periodicals
 - c. Sports Magazines
 - d. Banners
 - e. Pamphlets
 - f. other mode of advertisement

- v. SPORTS AND JOURNALISM**
 - a. Introduction

- b. Images and Messages in Media Sports
- c. Sports and Government
- d. Media as a Source of Propagation in Sports
- e. Media and the Development of Sports.

RECOMMENDED BOOKS

- 1. Essential of Management by Harold Koontz
- 2. Essentials of Marketing by Manmohan Joshi
- 3. Exploring Journalism by Mirza Muhammad Yousuf
- 4. Journalism for All by Dr. Mehdi Hassan and Abdus Salam Khurshid
- 5. Television and Radio Broadcasting by R.C. Ramanujam
- 6. TV Journalism by Navodita Pande
- 7. Role of Media in Sports By Dr. Waheed Mughal 2015

SCIENTIFIC SPORTS COACHING

(3 Cr. Hr)

OBJECTIVES OF COURSE

The purpose of this course is to provide knowledge about scientific coaching to maintain professionalism, fulfill the responsibilities, to manage the sports training stages, organize the training designed and mature application of teaching the well manners.

COURSE CONTENTS

- 1 Introduction to sports coaching**
 - a. Introduction and nature of coaching profession
 - b. Need and importance
- 2. Teaching Methodology for a Coach**
 - a. Skill, Technique and Ability
 - b. Skill Development
- 3. Role of a Coach**
 - a. Coaching Philosophy
 - b. Coaching Style
 - c. Coaching Ethics
- 4. Development of Skill Analysis and Strategies**
 - a. Physical Training
 - b. Mental Training
 - c. Tactical Training
 - d. Technical Training
- 5. Periodization of Training**
 - a. Off season Training
 - b. Pre-season Training
 - c. Peak/in-season Training
 - d. Micro cycle
 - e. Macro cycle
 - f. Meso cycle
 - g. Warming up
 - h. Cooling down
- 6. Components of Fitness**
 - a. Health related Fitness (Need, Importance & Improvement)
 - b. Skill related Fitness (Need, Importance & Improvement)
 - c. Training Laws and Principles
- 7. Coaching & Training Plans of major Games**
 - a. Athletics

- b. Cricket
- c. Hockey
- d. Football
- e. Volley Ball
- f. Badminton
- g. Basketball

Books & Reference Material

1. Dr. A.Waheed Mughal: The coaching Philosophy, Islamabad-2012
2. Dr. A.Waheed Mughal: The Theory of training, Islamabad-2013
3. Dr. A.Waheed Mughal: Science of sports training, Islamabad-2014
4. The Scientific Aspects of Sports Training; A.W.Taylor
5. Sports Coaching Concepts; A Framework for Coaches behaviour. John Lyle
6. Scientific Principles of Coaching; Englewood Cliff
7. Coaching Basketball; Jerry Kraus and Ralph Pim
8. Scientific Foundation of Coaching; Pate Rotella Mcclenghan

PLANNING SPORTS FACILITIES

(3+0 Cr.Hr)

OBJECTIVES OF COURSE

The course will be helpful in developing the knowledge of students about planning sports facilities. The course will also create awareness among the students to plan, locate, and know the size of Field House, Gymnasium, Stadium, and Swimming Pool facilities and sports Laboratories.

COURSE CONTENTS

- i PLANNING PROCESS**
 - a. Basic Consideration
 - b. Need for Area and Facilities
 - i) Need for Planning
 - ii) Planning Factors
 - iii) Planning Units – Types and Function

- ii PLANNING FOR SPORTS & PHYSICAL EDUCATION FACILITIES**
 - a. Major Concepts
 - b. Steps in Planning Process
 - c. Responsibilities of Physical Educator

- iii FACILITIES FOR RESEARCH**
 - a. General Consideration
 - b. Teaching and Research Laboratories
 - c. Specific Laboratories Facilities
 - i) Measurement and Evaluation
 - ii) Biomechanics
 - iii) Exercise Physiology
 - iv) Motor Learning and Psychology Learning

- iv PLANNING, LOCATION AND SIZE OF THE FOLLOWING FACILITIES**
 - a. Field House
 - b. Stadium
 - c. Gymnasium
 - d. Swimming Pool
 - e. Artificial Surfaces (Indoor and outdoor)

- v FACILITIES FOR FACULTY AND STAFF**
 - a. Administrative Units

- b. Essential administrative facilities
 - i) Administrative Office
 - ii) Faculty Offices
 - iii) Audio-visual Room
 - iv) Conference Rooms
 - v) Locker Shower Room
 - vi) Toilet and Lavatory Facilities

vi CONSERVATION AND MAINTENANCE OF SPORTS INFRASTRUCTURE

- a. Understanding of PC-I
- b. Compilation of PC-I, PC-II, PC-III

RECOMMENDED BOOKS

1. Dr. A.Waheed Mughal; Planning & Development of Sports Facilities, Islamabad-2013
2. Dr. Jahangir Khattak, Planning Facilitation, 2001, D.I.Khan
3. Planning Facilities for Athletics, Physical Education, and Recreation (1974) American Association for Health Physical Education, and Recreation 12013 Sixteenth Street N.W Washington DC 2006.
4. Eugene M. E, Richard P. T (1976) "Facilities in Sports and Physical Education" C.V Mosby Company

PHYSICAL EDUCATION FOR SPECIAL POPULATION (3+0 Cr. Hr)

OBJECTIVES OF COURSE

This course is designed to provide knowledge to the students about the rehabilitation of special persons through physical activities. The course will also create awareness regarding teaching methods useful for special people to adjust them in the society.

COURSE CONTENTS

- i HISTORICAL BACKGROUND OF SPECIAL POPULATIONS**
 - a. Concepts of Specials Populations:
 - i. Dark Age
 - ii. Modern Age
 - b. Concept for Special Populations in our Society
- ii UNDERSTANDING OF SPECIAL POPULATION**
 - a. W.H.O.'s Definition and Classification of Special Population
 - b. Basic Terms
 - c. Public Law
 - d. Posture and its Importance
- iii TYPES OF SPECIAL POPULATION**
 - a. Mental Retardation:
 - i. Mild
 - ii. Moderate
 - iii. Severe
 - iv. Profound
- iv. Deaf and Defective**
 - a. Mild
 - b. Moderate
 - c. Severe
 - d. Profound
- V Visually Impaired**
 - a. Blind
 - b. Partially Sighted
 - c. Partially Blind
 - d. Low Vision
- Vi Physically Disabled**
 - a. Mild
 - b. Moderate

- c. Severe
- d. Profound
- Vii TEACHING PROGRAMMES FOR SPECIAL POPULATION**
 - a. Individual Programmes
 - b. Developmental Programmes
 - c. Remedial Programmes
 - d. Therapeutic Programmes
- viii ADJUSTMENT OF SPECIAL POPULATION**
 - a. Factors Affecting Adjustment
 - b. The Effects of Environment
 - c. Ways of Making Adjustment
 - d. Adjustment of Special Populations in Society through Teachers and Parents
- ix PHYSICAL ACTIVITIES FOR SPECIAL POPULATION**
 - a. Games and Sports activities for Special Population
 - b. Fitness Exercises for Special Population
 - c. Understanding the Nature of Motor Learning
 - d. Movement Mechanical Principles for Special Population
- x PHYSICAL EDUCATION TEACHER FOR SPECIAL POPULATION**
 - a. Attributes of Physical Education Teacher
 - b. Qualifications of Physical Education Teacher

RECOMMENDED BOOKS

1. Dr. A.Waheed Mughal; Physical Education for Special Needs, Islamabad, 2013
2. Shekar, K.C. Adapted Physical Education, New Delhi: Khel Sahitya Kendra, 2005,
3. Jain, Anoop, Adapted Physical Education, New Delhi: Sports Publication, 2003.
4. Misra, Bhawana, Handbook of Teaching Disabled, New Delhi: Mohit, 2002.
5. Seamus Hegarty Mithu Alur, Education and Children with Special Needs, Sage Publications 2002 India.
6. Rao, V.K., Special Education, New Delhi: A.P.H., 2001.
7. Horrat, Michel, Developmental and adapted physical activity assessment, Human Kinetics Pub., London 2007.

INTRODUCTION OF PSYCHOLOGY

(3+0 Cr. Hr)

OBJECTIVES OF COURSE

The outlines of this course are drawn with the objectives to provide initial knowledge to the students on the subject relating to motor learning, personality development, stress management and its implication on athletes, coaches and organizers in terms of performance.

COURSE CONTENTS

- i INTRODUCTION**
 - a. Definition of Psychology
 - b. Importance of Psychology in sports and Physical Education
 - c. Branches of Psychology related to Sports
 - d. Psychological benefits through Physical Activities

- ii BASIC PSYCHOLOGICAL CONCEPTS**
 - a. Definition and Theories of Learning
 - b. Factors Influencing Learning
 - c. Motor Learning

- iii PERSONALITY AND SPORTS**
 - a. Defining Personality
 - b. Understanding personality structure
 - c. Studying personality from five viewpoints:
 - Psychodynamic Approach
 - Trait Approach
 - Situation Approach
 - Interactional Approach
 - Phenomenological Approach
 - d. Measuring personality
 - e. Personality development in Sports

- iv CONCENTRATION**
 - a. Defining concentration
 - b. Explaining attentional focus
 - c. Identifying Types of attentional focus
 - d. Recognizing Attentional Problems

RECOMMENDED BOOKS

1. Dr. A. Waheed Mughal: Sports Psychology, Islamabad, 2012

2. Cashmore, E. Key concepts in sports Psychology, London: Rutledge, 2005.
3. Shekar, K.C., Aspects of Psychology in Physical Education and Sports, New Delhi: Khel Sahitya Kendra, 2005.
4. Shamshad Ahmed, Psychological Basis of Physical Education, New Delhi: Isha Books, 2005.
5. Jain, R. Sports Psychology, New Delhi: Khel Sahitya Kendra, 2005.
6. Cox, Richard. H., Sports Psychology: Concepts and Applications, 5th Edition, Boston: McGraw Hill, 2002.
7. Ian Cockerill, Solution in Sports Psychology, Thomson, 2002.
8. Weinberg, R.S.Gould, D (2007); Foundations of Sports and Exercise Psychology, 4th Edition, Champaign, IL: Human Kinetics.

**TEST MEASUREMENT & EVALUATION IN PHYSICAL
EDUCATION AND SPORTS**

(3+0 Cr. Hr)

OBJECTIVES OF COURSE

The course is designed to make the students understand and use the statistical means for the research purposes. They will learn about inferential statistics using it in everyday life for the uplift of the discipline and bringing positive reforms in order to achieve the objective.

COURSE CONTENTS

- i INTRODUCTION**
 - a. Definitions of Test, Measurement and Evaluation
 - b. Importance of Test, Measurement and Evaluation in Physical Education
 - c. Basic Principles of Evaluation

- ii EVALUATION AND ADMINISTRATION OF TESTS**
 - a. Criteria for Selecting Appropriate Test
 - b. Pre test responsibilities
 - c. Duties and responsibilities during Testing
 - d. Post test responsibilities

- iii BASIC STATISTICS**
 - a. Standard Deviation
 - b. Normal Probability Curve
 - c. Standard Scores (Z. Scores-T. Scores)
 - d. Correlation
 - e. Anova Test

- iv MEASUREMENT OF PHYSICAL FITNESS**
 - a. Definition of Physical Fitness
 - b. Components of Physical Fitness
 - c. Physical Fitness Index
 - d. Measurement of Motor Fitness

- v GENERAL MOTOR ABILITY**
 - a. Definition of Motor Ability
 - b. Measurement of Motor Ability
 - c. Components of Motor Ability

- vi CARDIOVASCULAR FITNESS**
 - a. Definition

- b. Measurement of Cardiovascular Fitness
- c. Testing of Cardiovascular Fitness

vii RATING SCALES IN PHYSICAL EDUCATION

- a. Construction of Rating Scales
- b. Rules for the use of Rating Scales
- c. Types of Rating Devices

viii MEASUREMENT OF SPECIFIC SPORT SKILLS

- a. Hockey
- b. Football
- c. Basketball
- d. Badminton
- e. Volleyball
- f. Tennis
- g. Track & Field (one event from each group)

RECOMMENDED BOOKS

1. Dr. A Waheed Mughal; Test & Measurement in Physical Education, Islamabad, 2013
2. Osterlind J. Steven, Modern Measurement, Pearson Merrill Prentice Hall, 2006.
3. Popham W. James, Assessment for Educational Leadership, Pearson, 2006.
4. Linn L. Robert & Gronlund E Norman, Measurement and Assessment in Teaching, Person Education, 2003.
5. Margaret J. Safrit PhD, Terry M. Wood PhD, Introduction to Measurement in PE and Exercise Science, McGraw Hill, 2007.

RESEARCH METHODOLOGY IN PHYSICAL EDUCATION (3+0 Cr. Hr)

OBJECTIVES OF COURSE

Without any doubt research is the basic requirement for the academic promotion and development of a discipline. This basic informative course of research methods will help the students of Health, Physical Education and Sports to understand the definitions and meanings of research, use of the tools for data collection, procedures of sampling and various terminologies used in the research process. After going through the course, the students will be in a better position to pursue research projects in their respective field.

COURSE CONTENTS

- i INTRODUCTION TO RESEARCH**
 - a. Definition and meaning of research
 - b. Characteristics of research
 - c. Type of research
 - d. Need and importance of research in Physical Education.

- ii NATURE OF INQUIRY**
 - a. The search for truth.
 - b. Methods of acquiring knowledge, (authority, inductive reasoning method, deductive reasoning method, scientific method of inquiry).
 - c. Scientific Method: identification of the problem, formulation of hypotheses, collection of data, analysis and interpretation of data.

- iii THE RESEARCH PROBLEM**
 - a. Identification of the problems
 - b. Criteria of selecting the problems
 - c. Sources for locating the problems
 - d. Problems evaluation
 - e. Limitations, Delimitation, Assumption

- iv RESEARCH PROPOSAL**
 - a. Developing the research proposal
 - i) Statement of the problems
 - ii) Significance of the problems
 - iii) Objectives of the study
 - iv) Hypotheses
 - v) Procedure of the study
 - vi) Limitation/delimitation and scope of study

- v METHODS OF RESEARCH**
 - a. Historical research
 - b. Descriptive research
 - c. Experimental research
- vi SAMPLING**
 - a. Sampling
 - b. Types of sampling
 - c. Sampling procedure
- vii TOOLS FOR DATA COLLECTIONS**
 - a. Questionnaire
 - b. Interviews/Survey
 - c. Tests
 - d. Observation
 - e. Use of relevant and reference materials, Note taking
- viii WRITING THE RESEARCH REPORT**
 - a. Pattern or style of research report
 - b. The structure components of research report
 - c. Term report, Dissertation, Thesis, Foot notes, References Bibliography.

RECOMMENDED BOOKS

1. Dr. A.Waheed Mughal; Research Methods in Physical Education, Islamabad, 2012
2. David H. Clarke and H. Harrison Clarke, Research Processes in Physical Education.
3. John W. Best, Research in Education, Prentice Hall Inc.
4. Louis Cohen & Lawrence, Minion Research, Method in Education, Croom Helm London.
5. Muhammad Iqbal Saif, The Basics of Research Process, Gomal University, D.I. Khan, 2005.
6. Iqbal A Qureshi. 1996. Research Methods in Physical Education, Hyderabad. Alumni.
7. Shafqat Rasool, Research Methodology in Physical Edu, 2005, Lahore.
8. Dr. Khalid Rashid, Research Methods, 2005, Lahore.

SCIENCE OF SPORTS TRAINING

(3+0 Cr. Hr)

OBJECTIVES OF COURSE

The course is basically designed to create awareness in the perspective physical education for understanding the sports training and to develop a professional coach who can impart training under the scientific principles and in a systematic order. The course will enable the future coach to place the training processes in proper and thoughtful manner.

COURSE CONTENTS

- i. SPORTS TRAINING**
Introduction, Understanding of sports training, Coach in different capacities, relationship between coach and organization, athlete and link personals, Coaching style, Qualities of a good Coach
- ii. TRAINING PRINCIPLES**
Gradualness, Age Dependence, Utility, Loading/Over-Loading. Reversibility and specificity
- iii. COMPONENTS OF FITNESS**
Introduction, Components their need and importance in sports
- iv. FUNDAMENTAL ASPECTS AND TRAINING OF STRENGTH ABILITIES**
 - a. Introduction
 - b. Classification of Strength:
 - i). Maximum Strength
 - ii). Speed Strength-Elastic Strength
 - iii). Strength Endurance
 - iv). Organization of Strength Training
- v. FUNDAMENTAL ASPECTS AND TRAINING OF ENDURANCE**
 - a. Introduction, Local & general endurance types, Endurance training methods
 - b. Aerobic and an aerobic endurance short, middle and long distance endurance
- vi. FUNDAMENTAL ASPECTS AND SPEED TRAINING**
 - a. Introduction, Speed of movement
 - b. Phases of running action
 - c. Training Methods of speed Training
- vii. WARM-UP & COOL DOWN**
 - a. Introduction, Kinds (General, Specific)

- b. Need and Importance
- c. Effects of warm-up and Cool down

viii. LOAD (OUTER AND INNER LOAD)

- a. Introduction
- b. Loading factors
- c. Training methods, forms of organization and load structure
- d. Load and adaptation
- e. On selected principles for the arrangement of load (increasing load, continuous load).

RECOMMENDED BOOKS

1. Science of Sports Training, by Dr. A. Waheed Mughal, Pakistan Sports Board, 2008.
2. The Olympic Movement by Lausanne, Switzerland, 1984 (I.O.C)
3. Encyclopedia of Athletics, by The Hamlyn Publishing Group – 1985.
4. Training Theory, by Dr. A. Waheed Mughal, Pakistan Sports Board, 2008

SPORTS NUTRITION

(3+0 Cr. Hr)

OBJECTIVES OF COURSE

Health of the athlete is of paramount importance and needs due considerations. The knowledge regarding different components of nutrition and their implications upon human body in general and loss or gain of weight, appetite, use of different components of foods to remove the deficiencies of sodium and calcium or any other basic ingredients will prove helpful to the Physical Educators.

COURSE CONTENTS

- i INTRODUCTION**
 - a. Definition, Importance of Food and Nutrients obtained from food
 - b. Sports nutrition for maintaining health and improving sports performance

- ii CONCEPT OF HUMAN ENERGY**
 - a. Definition and types of energy
 - b. Human Energy systems

- iii CARBOHYDRATES**
 - a. Types and Sources
 - b. Metabolism and functions of carbohydrates
 - c. Carbohydrate loading
 - d. Glycemic Index

- iv LIPIDS**
 - a. Role of lipid in the body
 - b. Lipid as energy source and its reserve
 - c. Use of lipid during exercise

- v PROTEINS**
 - a. Functions, sources, recommended intake
 - b. Metabolism
 - c. Protein and exercise
 - d. BMI (Body Mass Index)
 - e. BMR (Basal Metabolic Rate)

- vi VITAMINS**
 - a. Introduction, sources
 - b. Types, importance

- c. Food Supplements its uses and importance

vii MINERALS

- a. Introduction, sources
- b. Types, Importance
- c. Mineral intake, supplements

viii WATER

- a. Recommended water intake
- b. Functions, Regulation of Body Temperature
- c. Fuel & Electrolyte losses and replacements
- d. Body regulation during exercise

ix WEIGHT MANAGEMENT

- a. Concepts of dieting
- b. Physiological factors of weight management
- c. Obesity

x NUTRITION FOR OPTIMAL HEALTH & PHYSICAL PERFORMANCE

- a. Balanced diet
- b. Pre, during and post contest meal
- c. Dietary recommendations for health & physical performance

RECOMMENDED BOOKS

1. Dr. A Waheed Mughal; Sports Nutrition, Islamabad, 2012
2. Kibler, 1990, Sport Participation Fitness Examination, Huamn.
3. Grisogono, 1991, Injuries and Diet Fitness, Children in Sport, J Murray.
4. Geoffrey P Webb, 2002, Nutrition: A Health Promotion Approach, Arnold Publishers, UK.
5. Melvin H Williams, 2000, Nutrition for Health Fitness and Sports, McGraw-Hill Publishers, New York, USA.

EXERCISE PHYSIOLOGY

(3+0 Cr. Hr)

OBJECTIVES OF COURSE

The course has been developed with the objective to provide knowledge of exercise physiology, exercise responses, methods to improve performance, fitness, age and exercise, gender differences, weight control, obesity and exercise environment.

COURSE CONTENTS

- i. INTRODUCTION**
 - a. Definition and nature of exercise physiology.
 - b. Importance of exercise physiology in Physical Education
- ii. MUSCULAR SYSTEM AND EXERCISE**
 - a. Muscle: Structure and function
 - b. Fiber types and biochemistry
 - c. Metabolic fuels for exercise and recovery
- iii. CARDIOVASCULAR SYSTEM AND EXERCISE**
 - a. Muscle blood flow and blood pressure
 - b. Work out put, Oxygen consumption and cardiac output.
 - c. Training effects on heart, stroke volume and heart rate
 - d. Effects of heart disease and old age on athletic performance.
- iv. ENVIRONMENT AND EXERCISE**
 - a. Acclimatization to heat, cold, altitude
 - b. Diseases related to environment.
- v. NERVOUS SYSTEM AND EXERCISE**
 - a. Effects of nervous system during exercise
 - b. Neuromuscular coordination
- vi. GLANDULAR SYSTEM AND EXERCISE**
 - a. General metabolic and endocrine changes
 - b. Effects of therapeutic medication
 - c. Hormonal changes
- vii. GENDER DIFFERENCES**
 - a. Exercise and sex differences
 - b. Male and Female athletes
 - c. Effect on performances and control

viii. OBESITY

- a. Definition and types
- b. Hazards
- c. Diabetes
- d. Coronary Heart Diseases (CHD)

RECOMMENDED BOOKS

1. Dr. A. Waheed Mughal; Exercise Physiology, Islamabad, 2012
2. Dr. Muhammad Asif, Exercise Physiology, Lahore, 2004-05.
3. Reilly T and Williams, 1990, Physiology of Sports (E&FN Spon, London).
4. Reilly T, 1990, Physiology of Sports, C.V. Brown Publisher, New York, USA.
5. 1989, Powers Exercise Physiology, C. Brown Publisher, New York, USA.
6. Shaver, 1990, Essentials of Exercise Physiology, Jitandir Vij Publisher, New Delhi, India.
7. Tiwari, Sandhya, Exercise Physiology, 2009 Sports publication, New Delhi
8. Power Scott. K. Exercise Physiology. Theory and Applied to fitness and performance 7th Edition, 2011
9. Robergs, R.A. Fundamental Principles of Exercise Physiology for fitness, performing & Health, 2010 McGraw-Hill, London.
10. Seidentop, D: Introduction to Physical Education, Fitness and Sports, 2009, Mountain View, Caliph, Mayfield

TRAUMA & REHABILITATION

(3+0 Cr. Hr)

OBJECTIVES OF COURSE

This course is designed to acquaint the students with the injuries its management and rehabilitation elaborating, knee, Tennis Elbow ankle injuries and explaining safety rules and basic physiotherapist treatment to manage in case of emergency.

COURSE CONTENTS

- i. INTRODUCTION TO SPORTS INJURIES**
 - a. Classification:
 - i) Cramps
 - ii) Ruptures
 - iii) Fractures
 - iv) Pulled Muscles/Muscle Stiffness
 - v) Strains
 - vi) Soreness
 - b. Identification:
 - i) Upper Limb
 - ii) Lower Limb
- ii. PREVENTION OF INJURIES DURING**
 - a. Warm up
 - b. Skill performance
 - c. Play
 - d. Use of equipment
 - e. Proper cool down
- iii. TREATMENT OF INJURIES**
 - a. Through Exercise
 - b. Through Medication
 - c. Hydro Therapy/Steam Therapy/Ice Therapy
 - d. Pressure Therapy
- iv. FRACTURES AND DISLOCATION OF JOINTS**
 - a. Definitions
 - b. Types
 - c. Treatment / Rehabilitation
- v. MASSAGE**
 - a. Definition of Massage
 - b. Importance of Massage
 - c. Methods of Massage

RECOMMENDED BOOKS

1. Dr. A. Waheed Mughal; Sports Injuries, Islamabad, 2012
2. Christopher M Norris, 1997. *Injuries Diagnosis and Management for Physiotherapists*, Butter Worth Heinemann Publisher, UK.
3. Iqbal, Yasmeen, Akhtar and Naeem, 1997. Sports Injuries: Prevention Diagnosis and Treatment. (Jamshoro: Alumin, Centre for Health & Physical Education).
4. Peterson Laras and Dr Per Renstorm, 1989. Sports Injuries, Published Federation and Folksam Insurance Company, UK.
5. Morris B Mellion, M D, 1989. Sports Injuries and Athletic Problem. Surjeet Publication, New Delhi, India.
6. Huston M A, 1987. *Sports Injuries*. Oxford Medical Publication, London.

CURRICULUM DEVELOPMENT IN PHYSICAL EDUCATION

(3+0 Cr. Hr)

OBJECTIVES OF COURSE

This course is designed with the purpose to acquaint students with basic concepts, theories and types of Health & Physical Education Curriculum related to development process and strategies adopted for evaluation and changes in curriculum as required.

COURSE CONTENTS

- i. INTRODUCTION**
 - a. Definition, Objective of Physical Education Curriculum
 - b. Types of Curriculum
 - c. Factors effecting Physical Education Curriculum
- ii. PLANNING THE PHYSICAL EDUCATION CURRICULUM**
 - a. Curriculum Development, Tasks in curriculum planning
 - b. Coeducation planning, Curriculum opinion, Structuring for quality
- iii. CURRICULUM RESEARCH AND CHANGE**
 - a. Curriculum Reform, Experimentation in Physical Education
 - b. Contemporary social problems & Physical Education Curriculum
- iv. ORGANIZATION FOR INSTRUCTION**
 - a. Determining Scope, Sequence and scheduling the curriculum
 - b. Flexible Scheduling in Physical Education curriculum
 - c. The need for multiple teaching stations
 - d. Time Allotment for program Elements, Correlation and Integration
 - e. Organizational Design of the curriculum.
- v. THE CURRICULUM GUIDE**
 - a. Curriculum Design, preliminary consideration
 - b. The curriculum coordinating committee, collecting materials and constructing the guide
- vi. THE PHYSICAL EDUCATION PROGRAMME**
 - a. The physical education curriculum for Kindergarten, primary, Middle Grade, Secondary & Higher Secondary and Graduate levels

vii. EVALUATING THE CURRICULUM

- a. The intent of Measurement and Evaluation
- b. Measuring progress in Elementary School
- c. Secondary School Evaluation,
- d. Appraising the Total Curriculum

RECOMMENDED BOOKS

- 1. Dr. A. Waheed Mughal; Planning & Development of Curriculum in Physical Education, Islamabad, 2011
- 2. Carl E Willgoose, The curriculum in physical education prentice Hall, Inc, Englewood Cliffs, New Jersey, 1994.
- 3. Anderson. Van Dyke, Secondary School Administration Houghton Mifflin Company, Boston, New York.
- 4. Charles A Bucher, K Foundations of Phy: Edu: The C.V. Mosby, St. Louis, Toronto, London, 1979.
- 5. The New Elementary School Curriculum 2012 by MACMILLAN
- 6. Books Curriculum Grows 2000 by Prof. Connolly
- 7. Education Books & Curriculum by Laurelwood 2012
- 8. Curriculum Constructional by Laurie Brady 2010 Australia
- 9. Educator Guide 2015 By NASA

SPORTS MEDICINE

(3+0 Cr. Hr)

OBJECTIVES OF COURSE

This course has been designed to make the students aware regarding the sports medicine subject and to give the knowledge of training and conditioning in sports. The course of sports medicine will also help in the development of the skills/knowledge regarding the sports injuries, their prevention, treatment, and rehabilitation. One of the main and very important objectives of this course is designed to aware the students regarding the use of doping in sports, their effects and legal position of the doping in sports.

COURSE CONTENTS

- i. INTRODUCTION**
 - a. Definition of Sports Medicine
 - b. History of Sports Medicine
- ii. INJURIES IN SPORTS**
 - a. Classification of Injuries
 - b. General Effects of Injuries
- iii. PREVENTION OF INJURIES**
 - a. Fitness
 - b. Obeying the Rules
 - c. Skills
 - d. Equipment
 - e. Proper Clothing
 - f. Self Control
 - i. Warm up and Cooling Down
- iv. EXERCISE AND FATIGUE**
 - a. Definitions
 - b. Effects of exercise on sports performance
 - c. Effects of fatigue on sports performance
- v. FITNESS TESTING AFTER INJURIES**
 - a. General Consideration in Testing
 - b. Fitness Testing (First Level, Second Level)
- vi. REHABILITATION IN SPORTS**
 - a. Principles of Rehabilitation
 - b. Local Problems (Pain, Swelling, Restricted Movement)
 - c. Non Acute Cases

- vii. **DOPING IN SPORTS**
 - a. Definition
 - b. Types of Doping
 - c. Effect of Doping on Athletes
 - d. Doping Control
 - e. Use of Doping in Sports

RECOMMENDED BOOKS

1. International Amateur Athletic Federation (2005-06) "*Official Hand Book*"
International Amateur Athletics Federation (I. A. A. F)
2. Mark Hargreaves and John Hawley (2003) "*Physiological Bases of Sports Performance*" McGraw-Hill
3. Williams J.G.P. and Sperry P.N (1982) "*Sports Medicine*" Second Edition Edward Arnold Ltd
4. Starkey Chad. Athletic training & Sports Medicine, 2010. Jones and Barlett Publishers, London
5. Staphy, G.C. Sports Medicine and Exercise Science, 2009, Ishal Books, New Delhi
6. Jain R. Sports Medicine, 2008 Khel Sahitya Kendra, New Delhi
7. Narang, Rivanka. Encyclopedia of Sports Medicine, 2008, Sports Publication, New Delhi.

BIOMECHANICS

(3+0 Cr. Hr)

OBJECTIVES OF COURSE

This course has been designed to impart basic scientific technical information about body movements involved in sports activities by elaborating biomechanics, form of motion, Kinematics of Physical Activities, Analyzing Games techniques.

COURSE CONTENTS

- i. INTRODUCTION**
 - a. Definition and Prospective
 - b. Why study Biomechanics
 - c. Importance of Biomechanics for Coach and Athlete
 - d. Qualitative & Quantitative Biomechanical Analysis

- ii. HUMAN MOMENTS**
 - a. Form of Motion
 - b. Linear
 - c. Angular
 - d. General Motion
 - e. Types of Movements
 - f. Factor effecting Human Movement

- iii. KINETIC CONCEPTS FOR ANALYZING HUMAN MOTION**
 - a. Linear Kinetics:
Inertia, Mass, Force, Newton's Laws of Motion. Friction, Impulse, Conservation of Momentum, impact, Pressure, work
 - b. Angular Kinetics:
Eccentric Force, Moment, Resultant Moment, Equilibrium, levers-Center of Gravity, Moment of Inertia, Angular, Momentum, Centripetal and Centrifugal force

- iv. KINEMATIC CONCEPTS FOR ANALYZING HUMAN MOTION**
 - a. Linear Kinematics:
Vectors and Scalars, Distance and Displacement, Speed and Velocity, Acceleration, Projectile Motion
 - b. Angular Kinematics:
Angular Distance and Displacement, Angular Speed, Velocity and Acceleration

- v. HUMAN MOVEMENT IN FLUID MEDIUM**
 - a. Nature of Fluids:

- i. Laminar versus Turbulent flow
 - b. Fluid properties
 - i. Buoyancy:
 - a). Characteristic of Buoyancy forces
 - b). Flotation
 - c). Flotation of the Human Body
 - c. Drag
 - i. Skin friction, Form Drag, Wave Drag
 - d. Lift Forces:
 - i. Foil shape
 - ii. Magnus Effects

vi. BIOMECHANICAL ANALYSIS OF SPORTS TECHNIQUES

- a. Cricket
- b. Football
- c. Basketball
- d. Handball
- e. Gymnastics
- f. Hockey
- g. Badminton
- h. Table Tennis
- i. Track & Field (Running, Throwing & Jumping)
- j. Swimming
- k. Volleyball

RECOMMENDED BOOKS

1. Dr. A.Waheed Mughal; Sports Biomechanics, Islamabad, 2012
2. B M Nigg, 1994, Biomechanics of the Muscular-Skeletal System.
3. W.Herog, 1994, John Wiley & Sons Publisher, USA.
4. Susan J Hall, 1995. Basic Biomechanics, McGraw-Hill Companies, USA.
5. J P Troup and Others, 1996. Biomechanics and Medicine in Swimming. VIIIE & FN Spun Publisher, UK.
6. Robert A Robergs, 1999. Fundamental Principles of Exercise Physiology.
7. Scott O Roberts, 2000. Fitness Performance and Health, McGraw-Hill Publisher, USA.
8. Dr. Dhana Joy Shaw, 2000. Mechanical Basis of Biomechanics, Sports Publications, New Delhi, India.

ADMINISTRATION AND MANAGEMENT IN SPORTS (3+0 Cr. Hr)

OBJECTIVES OF COURSE

Good administration and better management can produce best results. Physical Education and Sports are the fields that require most excellent administration for converting the efforts into real success. This particular course will help the physical educators and sports managers to understand the soul of administrative routines and become aware of the qualities and the qualifications of good administration, in addition to understanding the need of public relations and use of these relations for the promotion of physical education and sports.

COURSE CONTENTS

i. INTRODUCTION

- a. Meaning and Definition of Administration
- b. Need and importance of Administration in Physical Education
- c. Types of Administration
- d. Qualifications and traits of the Administrator
- e. Duties of Administrator

ii. ADMINISTRATIVE SETUP IN PHYSICAL EDUCATION

- a. Administrative organization and structure
- b. Private and Public organizations
- c. Objectives of the organization
- d. Physical Education at various levels of education in Pakistan
- e. Administrative setup of Sports and Physical Education in Pakistan

iii. PERSONNEL ADMINISTRATION IN PHYSICAL EDUCATION

- a. Principles of personnel Administration
- b. Facilities for staff and staff moral
- c. Teaching load, In-service training
- d. Qualification of staff
- e. Evaluation and Supervision
- f. Conduct of Sports Meeting

iv. CLASS MANAGEMENT

- a. Getting acquainted with the class
- b. Establishing rules for maintaining discipline
- c. Management of time and establishing the class routines
- d. Assignments and learning pace for students
- e. Stimulating students' interest in Sports
- f. Class environment
- g. Parents involvement and communication

- v. **PUBLIC RELATION**
 - a. Definition of Public Relation
 - b. Objectives
 - c. Need and importance of Public Relation in Physical Education
 - d. Principles of Public Relation

- vi. **PUBLIC RELATION IN PRACTICE**
 - a. Teacher Student Relation
 - b. Public Relation in various competitions
 - c. Community relations
 - d. Relations with parents and with general public
 - e. Relation with Administration and Inter Departmental Relations

RECOMMENDED BOOKS

1. Dr. A. Waheed Mughal; Administration & Management in Physical Education, Islamabad, 2011
2. Charles A. Bucher, Administration of Physical Education and Athletic Programme. The CV. Mosby Company.
3. Charles A. Bucher, Administration of Health and Physical Education Including Athletics. The CV. Mosby Company.
4. Edward F Volmer and Arthur A. Esslinger, The Organization and Administration of Physical Education. Prentice Hall Inc.
5. Howard Stephenson, Editor, Hand Book of Public Relations. McGraw Hill Book Company.
6. Irvin A Keller and Charles E. Forsythe, Administration of High School Athletics, Prentice Hall Inc.
7. Clifford H. Edwards, Classroom Discipline and Management, John Wiley and Sons, Inc.

SPORTS PSYCHOLOGY

(3+0 Cr. Hr)

OBJECTIVES OF COURSE

The knowledge of Sport Psychology will enable the students to learn more about the organized play and goal setting procedures, which will contribute to the services provided by them in the educational as well as professional institutions.

The people related to the sports have little know how about sports Psychology involvement in sport, which is resulting in the deserting of the ground and sport. This in turn is making the people idle and unhealthy. There is a dire need to clinch the people back to the play fields in order to achieve the goal of strong individuals who may contribute to the success of the nation. Psychology need to be infused at gross root level as it will act as motivator for the young generation, so if the Physical Education Teacher is equipped with the knowledge, he'll be better able to inculcate the theme in the off-springs.

COURSE CONTENTS

i. SPORTS PSYCHOLOGY

- a. Defining Sports and exercise Psychology
- b. Branches of Psychology with Special reference to Exercise and Sports
- c. Difference between Clinical and Educational Sports Psychology
- d. Applications of Psychology in Sports
- e. Role of Sports Psychology

ii. AGGRESSION IN SPORTS

- a. Defining Aggression
- b. Types and Theories of Aggression
- c. Understanding the causes of Aggression
- d. Examining Aggression in Sports:
 - Spectators and aggression
 - Games Reasoning and aggression
 - Athletic injuries and aggression
 - Performance and aggression
 - Team moral atmosphere and aggression

iii. MOTIVATION IN SPORTS

- a. Defining Motivation
- b. Reviewing three approaches to Motivation:
 - Trait-centered View
 - Situation-centered View

- Interactional View
 - c. Self Determination Theory (SDT)
 - d. Five Sub Theories of SDT:
 - Cognitive Evaluation Theory (CET)
 - Organism Integration Theory (OIT)
 - Causality Orientation Theory (COT)
 - Basic Psychological Needs Theory (BPNT)
 - Goal Contents Theory (GCT)
 - e. Motivation in Elite level sport
 - f. Self Determination and Training
 - g. Coaching Behavior and Motivation
 - h. Motivational Climate
- v. **GOAL SETTING IN SPORTS**
- a. Defining Goal Setting
 - b. Reasons for Goal Setting
 - c. Types of Goals
 - Outcome Goals
 - Performance Goals
 - Process Goals
 - Team Goals
 - d. Effectiveness of Goal Setting
 - e. Principles of Goal Setting
 - f. Smart Goals
 - g. Common Problems in Setting Goals
- vi. **ANXIETY, AROUSAL AND STRESS RELATIONSHIP**
- a. Differentiating among Stress, Anxiety and Arousal
 - b. Types of Anxiety
 - c. Theories of Anxiety
 - d. Relationship between anxiety and performance Anxiety reduction Techniques
 - e. Defining Stress
 - f. Understanding the stress process
 - g. Concept of Arousal
 - High, Low and Optimal Arousal
 - h. Relationship between Arousal and Performance
- vii. **IMAGERY AND PERFORMANCE**
- a. What is Imagery
 - b. Difference between Visualization and Imagery
 - c. Benefits of Imagery
 - d. Factors affecting the Effectiveness of Imagery

- e. How Imagery works
- f. Uses of Imagery in Sports
- g. How to develop an Imagery Training
- h. When to use Imagery

viii. SPORTS COHESION

- a. Definition of Cohesion
- b. Main Characteristics of Cohesion
- c. Personal Factor and Cohesion
- d. Team Factor and Cohesion
- e. Situational factors and Cohesion
- f. Leadership factor and Cohesion

ix. COGNITIVE AND BEHAVIORAL INTERVENTIONS OF SPORTS PERFORMANCE

- a. Relaxation Strategies in Sports
- b. Coping Strategies
- c. Arousal Energizing Strategies
- d. Hypnosis

RECOMMENDED BOOKS

1. Dr. A. Waheeed Mughal; Sports Psychology, Islamabad, 2010
2. Dorcas Eusam But, Psychology of Sports. Van Nostrand Reinhold Company, New York, USA. 1987.
3. J.E Kane, Psychological Aspects Of Physical Education And Sports. Rantledge and Keganrani London and Boston, 1972.
4. Richard H. Cox Sports Psychology. McGraw-Hill Companies Inc. 1221 Avenue of the Americas, New York, USA. 2002.
5. William F. Strand, Sports Psychology in Analysis of Athlete Behavior. Movement Publications, USA. 1980.
6. Weinberg, R.S. Gould D (2007), Foundations of Sports and Exercise Psychology, 4th Edition, Champaign, IL: Human Kinetics
7. Ryan, R.M. and Deci, E.L.M. Self-determination theory and the bening

BASICS OF HUMAN PHYSIOLOGY

(3+0 Cr. Hr)

OBJECTIVES OF COURSE

The outline of this course has been drawn with the objective to provide basic knowledge of human physiology and various parts of the body. It will acquaint the students with initial information about human body structure and its functions.

COURSE CONTENTS

- a. INTRODUCTION**
 - a. Definition of Physiology
 - b. Importance of Anatomy and Physiology in Sports
 - c. Terms & Terminologies used in Anatomy and Physiology

- b. TISSUES AND ORGANS**
 - a. Definition
 - b. Types
 - c. Physiology and Functions of Hormones in Human Body

- c. PHYSIOLOGY OF SKELETAL SYSTEM**
- d. PHYSIOLOGY OF MUSCULAR SYSTEM**
- e. PHYSIOLOGY OF DIGESTIVE SYSTEM**
- f. PHYSIOLOGY OF CARDIOVASCULAR SYSTEM**
- g. PHYSIOLOGY OF NERVOUS SYSTEM**

RECOMMENDED BOOKS

1. Saladin, K.S. *Anatomy & Physiology*. 3rd Edition, New York: McGraw Hill, 2004.
2. Chaurasia, B.D. *Human Anatomy*. 4th Edition New Delhi: CBS, 2004.
3. Marieb, E.N. Human. *Anatomy and Physiology*, 4th Edition, New York: Benjamin, 2004.
4. Elaine N. Marieb. *Human Anatomy & Physiology*, The Benjamin/Cummings Publishing Company, USA, 2002.
5. Seeley, Rod. R. *Anatomy & Physiology*. 7th Edition, McGraw-Hill New York, 2006.
6. Widmaier, Eric. P. *Human Physiology: The mechanism of body Function*. 10th Edition, McGraw Hill New York, 2006.

TALENT IDENTIFICATION IN SPORTS

OBJECTIVES OF COURSE

This course will provide opportunities to familiarize students with the talent in sports and how to develop it on scientific basis. This course will help a sportsman to enhance performance. It will help to a common person, Managers, Coaches and parents to know about the stages and phases of talent development of athletes that ultimately lead towards sporting excellence.

COURSE CONTENTS

- i. Talent Identification & Development (TID)**
 - a. Introduction
 - b. Sports Talent
 - c. Historical perspective
 - d. British
- ii. Talent Identification & Development (TID)**
 - a. South Africa
 - b. India
 - c. Russia
 - d. Germany/Europe
- iii Games & Sports**
 - a. Kinds of Games & Sports
 - b. Objective of Games & Sports
 - c. Benefits of Games & Sports
- iv Stages of Talent Identification**
 - a. Talent Detection
 - b. Talent Identification
 - c. Talent Development
 - d. Talent Selection
- v Stages of Talent Development**
 - a. Bloom's Model of Staged Development Stages
- vi Stages of Talent Development**
 - a. Initiation
 - b. Development
 - c. Perfection
- vii Role of Coaches in Talent Identification & Development**
 - a. Role of Coach
 - b. Coaching Philosophy
- viii Role of Coaches in Talent Identification & Development**
 - a. What is coaching

- b. Coaching Styles
- ix Mid Term Examination**
- x Growth & Development**
 - a. Stages of Growth & Development (male/female)
 - b. Physical Development
 - c. Pattern Growth in Size
 - d. Pattern Growth in Proportion
- xi Case Study and Project**
- xii Growth & Development**
 - a. Difference between Boys & Girls
 - b. Early & Late Developers
 - c. Children & Exercise
 - d. Children Basic Movements
 - e. Principles of Structuring Practice
- xiii Test/Evaluation in Talent Identification**
 - a. General Information
 - b. Physiological Aspects of Talent
 - c. Psychological Aspects of Talent
- xiv Test/Evaluation in Talent Identification**
 - a. Technical/Tactical Aspects of Talent Identification
 - b. Experts Finding in Talent Identification
 - c. Suggestion for a Talent Identification Program
 - d. Talent Assessment Form
- xv Career Development**
 - a. International Model
 - b. Pakistani Model
 - c. International Model
 - d. Pakistani Model
- xvi Review**
- xvii Examination**

RECOMMENDED BOOKS

1. Dr. A.Waheed Mughal, Talent Identification, 2014, Islamabad
2. Handbook of Sports Psychology (3rd Ed.) by G. Tenenbaum and R.C. Eklund, Bloom, B.S. & Sonsniak, L.A. (1985)
3. Developing talent in young people New York: Ballantine Books.
4. Handbook of Sports Psychology (2nd Ed.) by R.N. Singer New York: John Wiley & Sons. Hohmann, A & Seidel, I (2003)
5. Scientific aspects of talent development; International Journal of Physical Education, 40, 9-20

6. Handbook of research in Sports Psychology by R. Singer M. Murphy & L.K. Tennant (Eds) New York: MacMillan Williams A & Reilly, T. (2001)
7. Talent Identification and development in soccer, Journal of Sports Sciences, 18, 657-667. Williams, A & Franks, A (1998)
8. Talent Identification in soccer, Sports Exercise and Injury, 4, 159-165 Cote, J. (1999)

WELLNESS AND FITNESS

(Credit Hr. 3+0)

OBJECTIVES OF COURSE

The course is designed to provide knowledge to the students about their Health and Wellness. This course will create awareness of healthy life style to be adopted and Performing Safe Physical Activities/ Exercise.

1. Introduction

- Facts about Health and Wellness
- Facts about Physical Fitness
- Facts about Healthy lifestyle

2. Readiness for Physical Activity

- Warm up and Cool down

3. How much Physical Activity is enough?

- The Principles of Physical activity
- Physical activity Pyramid
- Facts about Physical activity
- Patterns and strategies for action

4. Health Benefits of Physical Activity

5. Safe Physical activity and Exercises

6. Basic Resistance Training Program

7. General Physical Fitness & Sports specific Fitness Program

8. Weight Management

9. Illicit Drugs Use, Misuse & abuse

Books & Reference Material

1. Concepts of Fitness & Wellness: Charles B.Covin, Ruth Lindsey, Gregory Welk
2. Wellness concepts and Application: David J. Anspaugh, Michael H. Hamrick, Frank T. Rosato
3. Fit & Well: Thomas D.Fahey, Paul M. Insel, Walton T. Roth
4. Concepts of Physical Fitness: Chrles B. Covin, Ruth Lindsey, Greg Welk
5. Back pain & Good posture, Islamabad 2013 By Dr. Waheed Mughal

MOVEMENT EDUCATION

(Credit Hr. 2+1)

OBJECTIVES OF COURSE

The course has been designed to provide the students basic knowledge regarding body movement involved in daily practices and sports activities. This course shall also be helpful for the students to understand how to save energy, by maintain a better body position in human motion.

1. INTRODUCTION

- a. Definition of movement Education
- b. Origins of Movement Education
- c. Nature of Movement Education
- d. Theories of Movement

2. GENERAL FACTORS EFFECTING MOVEMENT

- a. Physiological Factors
- b. Psychological Factors
- c. Sociological Factors

3. SELECTED FUNDAMENTAL MOVEMENTS

- a. **Loco motor Movements**
Walking-Running-Jumping-Hopping-Sliding-Leaping-Rolling Gliding
- b. **Non-Loco motor Movement**
 - Curling and Stretching
 - Turning and Twisting
 - Pushing and Pulling
 - Lifting and Lowering
 - Swinging and Circling
 - Stillness and Balancing
- c. **Other Areas**
 - Movement Sequence
 - Partner and Group Work
 - Small Area Games and Lead-up Activities

General instructions, Body movement, Equipment skills, Games in circle formation, Games in line formation, Games in free formation, Team races, Indoor Games, Football, Cricket, Hockey Games and Sports Day

4. SOMATOTYPING

- a. Historical Overview
- b. Body Types – Sheldon's Method
- c. Endomorph- Mesomorph-Ectomorph

5. **MESSAGE**
 - a. Definition of Massage
 - b. Importance of Massage
 - c. Types of Massage

Books & Reference Material

1. Dr. A.Waheed Mughal; Science of Movement, Islamabad-2012
2. Bouchard, 1991, Physical Activity Sciences, Human, 23
3. Panda P,K Sharma O.P New Encyclopedia of Physical Education, Vol. 5 Khel Sahitya Kendra
4. Barratt, Physical Ethics or the Science of Action
5. Wads, 1995, Introduction to Kinesiology, WCB Brown
6. Thompson, 1994, Manual of Structural Kinesiology, Mosby Year Bok
7. Winter, David A. Biomechanics of Human Movement, John Willy and Sons
8. Schurr, Evelyn L, Movement Experiences for Children, Prentice Hall, Inc. Englewood Cliffs, New Jersey, 2004

COURSE CONTENTS OF PRACTICAL (GAMES)

OBJECTIVES OF COURSE

This practical course has been designed with the purpose to provide technical knowledge to students to develop their skills in selected games.

COURSE CONTENTS

1. **TABLE TENNIS (Skills, Coaching and Officiating)**
 - a. Stance (Standing Position & Grip)
 - b. Service
 - c. Strokes
 - d. Smash
2. **SQUASH (Skills, Coaching and Officiating)**
 - a. Stance (Standing Position & Grip)
 - b. Service
 - c. Strokes
 - d. Footwork
3. **TENNIS (Skills, Coaching and Officiating)**
 - a. Stance (Standing Position & Grip)
 - b. Service
 - c. Strokes
 - d. Footwork
4. **BADMINTON (Skills, Coaching and Officiating)**
 - a. Stance (Standing Position & Grip)
 - b. Service
 - c. Strokes
 - d. Footwork
5. **NET BALL (Skills, Coaching and Officiating)**
 - a. Receiving
 - b. Dribbling
 - c. Defense
 - d. Footwork
 - e. Shooting
 - f. Vision
 - g. Conclusion
6. **HANDBALL (Skills, Coaching and Officiating)**
 - a. Grip
 - b. Dribbling
 - c. Passing
 - d. Dodging
 - e. Defense
 - f. Catching

- g. Throwing
 - h. Shooting
7. **BASKETBALL (Skills, Coaching and Officiating)**
- a. Dribbling
 - b. Passing
 - c. Defense
 - d. Shooting
8. **FOOTBALL (Skills, Coaching and Officiating)**
- a. Kicking
 - b. Dribbling
 - c. Passing
 - d. Shooting
 - e. Blocking
 - f. Goal Keeping
9. **VOLLEYBALL (Skills, Coaching and Officiating)**
- a. Service
 - b. Digging/Reception
 - c. Boosting/Setting
 - d. Smashing/Attack
 - e. Blocking
 - f. Court Defense
10. **HOCKEY (Skills, Coaching and Officiating)**
- a. Dribbling
 - c. Passing
 - d. Stopping
 - e. Hitting
 - f. Scooping
 - g. Goal Keeping
11. **CRICKET (Skills, Coaching and Officiating)**
- a. Stance (Gripping of Bat)
 - b. Standing (Position at Crease)
 - c. Bowling (Ball Gripping and Run-up)
 - d. Fielding
 - e. Batting Skills
 - f. Wicket Keeping

RECOMMENDED BOOKS

1. Dr. A. Waheed Mughal; Rules & Techniques of Games & Sports, Islamabad, 2010
2. Dr. P.Modak, Rules and Principles of Sports & Games, New Delhi, India, 2005
3. Dr. Anil Sharma, Sports Laws (with latest Rules and Management), New Delhi, India, 2004
4. Dr. Anil Sharma, O.P.Sharma, The Illustrated Encyclopedia of Rules in Sports & Games, New Delhi, Sports Publication, 2004
5. B.K Chaturvedi, Rules and Skills of Games & Sports, New Delhi, Goodwill Publishing House, 2008

COURSES CONTENTS OF PRACTICAL (TRACK AND FIELD)

OBJECTIVES OF COURSE

The outline of this practical course is prepared with the purpose to provide basic knowledge to the students with modern approach for developing their skills in Track and Field events. Furthermore this course will enable them to develop courage, determination, speed, endurance and self-reliance.

COURSE CONTENTS

1. **SPRINTS RACES (100 Meter, 200 Meter, 400 Meter) (Skills, Coaching and Officiating)**
 - a. Start (Position at Block)
 - b. Body Position-Strides (during different phases of race)
 - c. Finishing Technique
2. **OBSTACLE RACES (Hurdle Races 100m, 110m, 400m) (Skills, Coaching and Officiating)**
 - a. Start (Position at Block)
 - b. Body Position while crossing hurdle and striding
 - c. Finishing Technique
3. **SPRINT RACES (Relay Races) (Skills, Coaching and Officiating)**
 - a. Start (Position at Block)
 - b. Batten changing
 - c. Finishing Technique
4. **THROWS (Discuss, Shot Put, Hammer Javelin) (Skills, Coaching and Officiating)**
 - a. Stance
 - b. Grip/Holding
 - c. Glide
 - d. Throw and Balance
5. **JUMPS (Horizontal and Vertical) (Skills, Coaching and Officiating)**
 - a. Start
 - b. Run-up
 - c. Jumping style at Takeoff board
 - d. Style of crossing bar
 - e. Landing

6. **MIDDLE AND LONG DISTANCE RACES (Skills, Coaching and Officiating)**
 - a. Start
 - b. Running Techniques
 - c. Rhythm
 - d. Finishing

RECOMMENDED BOOKS

1. Dr. A. Waheed Mughal; Run Jump Throw, Islamabad-2012
2. Dr. A. Waheed Mughal; Olympic & Recreative Sports, Islamabad-2013
3. Dr. M.L. Kamlesh, Athletic Personality: A Psychological Probe, New Edlhi, 2005
4. Ekta, Teaching and Coaching Athletics, New Delhi, 2004
5. O.P Sharma, Athletics Skills & Rules, New Delhi, 2003
6. Guy Butler, Athletics & Training, New Delhi, 2003

COURSES CONTENTS OF PRACTICAL (GYMNASTICS APPARATUS WORK)

OBJECTIVES OF COURSE

The purpose of introducing this practical course of Gymnastic Apparatus work is to provide students the basic training to acquire knowledge to participate in healthful activities effectively as means of improving the physical fitness of the youth.

COURSE CONTENTS

1. **EXERCISE ON PARALLEL BAR (Skills, Coaching and Officiating)**
 - a. Simple Turn
 - b. Forward roll to straddle Seat
 - c. Forward Roll
 - d. Backward Up Rise
 - e. Cartwheel
 - f. Twisting
 - g. Turning
 - h. Backward Roll
 - i. Rhythmic Exercise
 - j. Front Somersault
 - k. Mat Drills
 - l. Trampoline Drills
2. **SWIMMING (Skills, Coaching and Officiating)**
 - a. Warm up
 - b. Dress
 - c. Styles
 - d. Strokes
 - e. Start
 - f. Finishing

RECOMMENDED BOOKS

1. Dr. A. Waheed Mughal; Practical Note Book of Gymnastics, Islamabad, 2013
2. Renu Jain, Men Gymnastics Coaching, New Delhi, 2005
3. Anoop Jain, Gymnastics Rule Book, 2004, New Delhi, 2004
4. M.B. Davies, Physical Training in Schools, New Delhi, 2004
5. Renu Jain, Play & Learn Gymnastics, New Delhi, 2004
6. David Pearson, Play the Game Gymnastics, Great Britain, 1991

**APPENDED BELOW ARE THE ADDITIONAL OPTIONAL COURSES
RECOMMENDED TO BE SELECTED BY THE UNIVERSITIES AT THEIR
CONVENIENCE**

APPLIED BIOMECHANICS IN SPORTS

OBJECTIVES OF COURSE

This course would enable the students to carry out different tests to analyze the movement of different body parts through video analysis and other necessary equipment.

SPORTS SOCIOLOGY

OBJECTIVES OF COURSE

This course would enable the students to know about the different technologies being used in different games and sports along with its functions for the purpose of understanding the movement, identifying the mistakes and developing the sporting skills and techniques.

STRENGTH AND CONDITIONING COURSE

OBJECTIVES OF COURSE

This course would be designed to make the students understand, the principles, method, applications and techniques of strength and conditioning for incorporating in fitness program of different levels. The student will also understand difference between the maximum, basic, absolute strength, techniques and other conditioning abilities along with designing, using and setting fitness gym.

RECREATION AND LEISURE SERVICES

OBJECTIVES OF COURSE

This course will help the students to understand the significance of recreational activities for a common man.

PUBLIC RELATION IN SPORTS

OBJECTIVES OF COURSE

The objective of this course is to highlight the significance and introduce the fundamental of public relation with its role in the society and field of sports.

PHYSIOTHERAPY IN SPORTS

OBJECTIVES OF COURSE

This course is designed to help the student to understand injuries and to provide first hand treatment. It will also help to learn different types of injuries and techniques of rehabilitation

**MS/MPhil SPORTS SCIENCES
&
PHYSICAL EDUCATION**

SCHEME OF STUDY FOR MS/MPhil IN SPORTS SCIENCES AND PHYSICAL EDUCATION

PROGRAM OBJECTIVES

To encourage creativity, analytical thinking, critical analysis and innovative problem solving in Sports Sciences & Physical Education.

To nourish research potential and promote research activities keeping in view the Pakistani perspective in addition to abreast the students with the most recent developments and trends in the fields of Sports Sciences & Physical Education.

SCOPE

The MS/MPhil course is a pre-doctoral program which develops research aptitude and experiences in the field of Sports Sciences & Physical Education.

ELIGIBILITY CRITERIA

A candidate for admission to the MS/MPhil degree course must hold a MA/MSc degree in the relevant field or an equivalent qualification.

Minimum GPA in semester system must be 2.00 out of 4.00 or at least 60% marks in annual system.

Applicants need to pass GAT (General) test with 50% score conducted by NTS or Entry Test and interview conducted by the University.

DURATION OF THE COURSE

Two Years/Four semester

Minimum 2 years

Maximum 5 Years (Subject to the approval by the Competent Authority)

Credit Hours 24 + 6 = 30 (Three additional courses to be taken in lieu of research)

Medium of Instruction English

MS/MPhil SCHEME OF STUDIES

Total Credit Hours	30	Duration	2 years
Course work	24	Semester	04
Research work/Thesis	06		

COURSE OF STUDY

For the MS/MPhil Degree in Sports Sciences & Physical Education there shall be three semesters course work with eight subjects (Theory) of 3 credit hours each, total of 24 credit hours, whereas Research work of 6 credit hours shall be undertaken in the 4th semester as per following details:-

CORE COURSES

1. Training Methods Theories & Training Planning
2. Educational Measurement and Evaluation in Physical Education
3. Nutrition and Athletic performance
4. Planning & Development of Sports Facilities

OPTIONAL COURSES

1. Advance Educational Research Methods (in Physical Edu)
2. Leadership: Theory & Practices
3. Computer Application in Physical Education
4. Media Management & Sports Marketing
5. Special Education
6. Curriculum planning and Development in Physical education
7. Sports Medicine
8. Sports and Exercise Psychology
9. Talent Identification & Development

SEMESTER-I

Credit Hours: 09

1. Training Methods, Theories & Training Planning (**Core**)
03 CH
2. Advance Educational Measurement and Evaluation (**Core**)
03 CH
3. Leadership: Theory & Practice (Optional) 03 CH

SEMESTER-II

Credit Hours: 09

1. Nutrition and Athletic performance(Core) 03 CH
2. Planning & Development of Sports Facilities (Core) 03 CH
3. Advance Educational Research (Optional) 03 CH

SEMESTER-III**Credit Hours: 06**

Two optional subject shall be selected from the list shown above, each of 03 Credit hrs

SEMESTER-IV Research Thesis (Optional)**06 CH**

During first 3 Semesters, students need to take 8 courses at the ratio of 3+3+2, while the 4th Semester is reserved for research thesis. In case of Plan-B, the research work can be replaced by three additional courses from the list of electives.

SCHEME OF STUDIES FOR MS/MPhil IN SPORTS SCIENCES & PHYSICAL EDUCATION

Course Code		Core Courses	Credit Hours
SSS	520	Planning and Development of Sports Facilities	3-0
SSS	522	Theories, Methods and Planning of Training	3-0
SSS	524	Advanced Test, Measurement & Evaluation in Physical Education	3-0
SSS	528	Nutrition and Athletic Performance	3-0
RES	530	Advance Educational Research Methods (in Physical Education)	3-0
SSS	604	Leadership: Theory & Practice	3-0
SSS	610	Computer Applications in Physical Education	2-1
SSS	613	Media Management & Sports Marketing	3-0
SSS	623	Special Education	3-0
SSS	625	Curriculum Development & Text Books Production	3-0
SSS	630	Sports Medicine	3-0
SSS	633	Sports and Exercise Psychology	3-0
RES	690	Research Thesis	0-6

MS SPORTS SCIENCES & PHYSICAL EDUCATION

Subject: **ADVANCED RESEARCH METHODS**
Credit Hours = 03 **(Optional)**

COURSE DESCRIPTION

Advanced Research Methods is an advanced lecture/laboratory course in which students are required to apply their existing knowledge of research to the planning, execution, and reporting of research activities. The objectives of this course are:

1. Identification of research problem and its operationalization in specific procedures and designs.
2. Search of relevant literature, summary, and analysis
3. Construction of measuring instruments, experimental procedures, laboratory setups, and selection and treatment of research participants.
4. Analysis and interpretation of data
5. Expression of results in research reports that correspond to the standards of the scholarly journals in the relevant field
6. Ability to use modern research tools

COURSE OUTLINE

WEEK WISE BREAKDOWN

Week	Topic/Activity
1	Overview of research: Scientific method, Types approaches, classification
2	Identification & selection of problem: Abstracts, ERIC, RIC, CIJE
3	Review of related literature: Broad problem area, reason for review, conducting review, writing review
4	Preparing research proposal (planning research): Preparing Research proposal, General Considerations. Components, Evaluation of Research Plan
5	Population, Sampling: Defining population and sample: methods of selecting and sample, sample size and sample bias
6	Developing instruments: Selection of Instruments, standardized test, validity, reliability, types of test, test administration

7	Descriptive research, Historical research, Case study: Descriptive research, purpose and process, Types of Descriptive research
8	Historical research, purpose, process, case study, purpose and process
9	Experimental research, Co relational research: Experimental research, purpose, manipulation and control, Experimental Design.
10	Correlation research: purpose, process, types
11	Analysis of qualitative data: Qualitative data reduction, data display, conclusion, reliability and validity
12	Analysis of quantitative data: Quantitative data coding, Editing and Transformation, Central Tendency and Dispersion, reliability and validity
13	Introduction to Minitab/SPSS: How SPSS Works, Descriptive statistics, inferential and multivariate statistics
14	APA Manual: Practicing APA.
15	Writing research report/thesis: Practical Activity
16	Review
17	Examination

Recommended Books

1. Dr. A. Waheed Mughal. 2013, Research Methods in Physical Education.
2. Shafqat Rasool, Research Methodology in Physical Edu, 2005, Lahore.
3. Dr. Khalid Rashid, Research Methods, 2005, Lahore.
4. Iqbal A Qureshi. 1996. Research Methods in Physical Education, Hyderabad. Alumni.
5. Research Methods for Business (A skill building approach), 3rd Edition, by Uma Sekaran
6. Probability & Statistics in Engineering and Management & Sciences, Willian W. Hines and Douglas C. Montgomery, John Wiley & Sons.
7. Educational Research ((Fifth Edition) L.R.Gay: National Book Foundation

**ADVANCE EDUCATIONAL MEASUREMENT & EVALUATION
(in Phy Edu) (Core)**

OBJECTIVES OF COURSE

03 CH

The course is designed to make the students understand and use the statistical means for the research purposes. They will learn about inferential statistics using it in everyday life for the uplift of the discipline and bringing positive reforms in order to achieve the objective.

COURSE CONTENTS

WEEK WISE BREAKDOWN

Week	Topic/Activity
1	Introduction Definitions of test, measurement and evaluation Importance of test, measurement and evaluation in Physical Education Objectives of measurement and evaluation in Physical Education
2	Basic Statistics Statistics in Physical Education Measures of Central Tendency and measures of dispersion Standard Deviation Normal probability curve
3	Basic Statistics Standard scores (Z. Scores. T. Scores) Correlation Anova Test Chi Square
4	POSTURE & BODY MECHANICS Posture /good, bad posture Centre of Gravity Gravity assisting/ resisting muscles
5	POSTURE & BODY MECHANICS Postural deviations Laboratory work Posture Rating Test
6	BODY MEASUREMENT Body Types Skin Fold Measurement Energy Intake Expenditure
7	BODY MEASUREMENT BMR Calculating Expenditure for a Particular Activity Methods of controlling overweight

8	HAWARD STEP TEST Introduction Cardiovascular Measurement Procedure Test comparison Workshop
9	MOTOR FITNESS & ITS MEASUREMENT Introduction Motor Control: Receptors, Translators, effectors Component of Motor Fitness
10	MOTOR FITNESS & ITS MEASUREMENT Fitness Assessment <ul style="list-style-type: none"> • Methods of Fitness Assessment • Aerobic /Anaerobic Power • Muscular Endurance • Muscular Strength • Agility and Flexibility
11	GAMES/SPORTS SKILLS TEST Hockey skills Test Men & Women Football Skills Test Basketball skills Test for Boys: Johnson Basketball Test Badminton skills Test Volleyball skills Recommended Test
12	GAMES/SPORTS SKILLS TEST Table Tennis skills Test Tennis skills Test Squash Skills Test Netball skills Test Cricket skills Test Golf skills Test General Skills Test
13	Games & Sports Skills Test (Case Study Projects)
14	TRACK & FIELD MEASUREMENT/TEST Running Event Assessment Throwing Event Assessment Jumping Event Assessment
15	SKILL ACQUISITION/ GAMES ANALYSIS METHODOLOGY Characteristics of Skill Learning of Motor Skills Organization of Skill
16	SKILL ACQUISITION/ GAMES ANALYSIS METHODOLOGY Skill Analysis Phases of Skill Learning Team Analysis

17	Review
18	Examination

RECOMMENDED BOOKS

1. Dr. A.Waheed Mughal: 2012, Test & Measurement in Sports / Physical Education
2. Osterlind J. Steven, Modern Measurement, Pearson Merrill Prentice Hall, 2006.
3. Popham W. James, Assessment for Educational Leadership, Pearson, 2006.
4. Linn L. Robert & Gronlund E Norman, Measurement and Assessment in Teaching, Person Education, 2003.
5. Margaret J. Safrit PhD, Terry M. Wood PhD, Introduction to Measurement in PE and Exercise Science, McGraw Hill, 2007.
6. Number in Motion: by Dale E. Mood, Mayfield publishing Co., 2001
7. Research Design and Statistics for Physical Education: by Annel Roth Stein, Prentice Hall Inc., 2000
8. Physical Education Theory & Practice, Davis-D, Malaysia

PLANNING AND DEVELOPMENT OF SPORTS FACILITIES

OBJECTIVES OF COURSE

03 CH

The course of planning and development of sports facilities will help the scholars to get the know how about planning facilities, its kinds with pre-requisite. This course will also create awareness among the students to understand the developmental procedure, its measurement, financial implications space/area required. It would also throw light on big projects Management its procedure globally and at national level like Gymnasium, Stadium, and Swimming Pool facilities. Professional Sports Laboratories also come under the preview of this course.

WEEK WISE BREAKDOWN

Week	Chapter Name/Topics
1	Planning Process of Sports Facilities: National Project Management Policy, Project Management Life Cycle, Financial Management, Project Monitoring, Planning Factors Types and Functions,
2	Role of Architect, Need and Importance of Planning Sports Facilities, Construction of PC-I & II Forms, Infrastructure Sector, Production Sector, Social Sector
3	Dos & Don'ts in Planning & Development of Sports Facilities: Preparation Stage, Implementation Stage, Completion Stage, Facility Planners Check List,, General, Climate Control, Electrical / Walls/ Floors, Gymnasium and Special Rooms
4	Sports Facilities for Elementary Schools (An International overview): Salient Features/Guidelines for Physical Education Facilities, Elementary Schools Indoor Activity Area,
5	Sports Facilities for Secondary Schools (An International overview): Salient Features/Guidelines for Physical Education Facilities, Secondary Schools Indoor Activity Area, Teaching Stations, Construction of a Mini Gymnasium (Sample), Labs Activities, Multimedia Lab, Psychological Lab
6	Sports Facilities for Colleges and Universities (An International overview): Guidelines for College & University Facilities, Main Gymnasium, Principles of Planning & Construction, Classrooms/Workroom, Recreation Buildings
7	Research and Labs Facilities: General Consideration, Special Laboratory Facilities, Physiology of Exercise Lab, Biomechanics Lab

8	Human Exercise Room, Analytical Rooms, Administrative Units/Facilities, Administrative Facilities
9	Facilities for Lockers and Showers: Introduction, Dressing / Lockers Room, Shower Rooms, Toilet Lavatory , Storage/Laundry
10	Track & Field and Outdoor Sports Facilities: Ball/Racket Games Fields, Running Tracks & Fields, Racket Games Courts, Field Houses and Stadium,
11	Planning and Location, Open Sports Facilities, Marking / Laying Mechanism of Track & Field
12	Marking of Standard Track with Formula, Lanes & Stagers, Arches & Sectors
13	Facilities for Recreation & Outdoor Pursuits: Introduction, Camps & Camping, Housing Units, An international Concept of Parks Schools, Planning & Location, Facilities for Handicapped:
14	Swimming Pools Facilities (Indoor & Outdoor): Design and Purpose, Planning Consideration
15	Competition Pool, General & Specific Recommendation, Requirement for Outdoor Pools, Check List for Planners of Swimming Pools
16	Revision
17	Final Examination

RECOMMENDED BOOKS

1. Dr. A. Waheed Mughal (2013) Planning & Development of Sports Facilities.
2. Construction Guide, 2010 Ministry of Communication
3. Campus Recreational Sports Facilities: Planning, Text Book Education by NIRSA 2013
4. Recreation in Sports Planning Guide by James Daly 2012
5. Planning and Design of Outdoor Facilities, Department of US Army 2010
6. Facilities Planning and Design 2011, gzagenius
7. Sport Facilities & Technologies 2010 by Greedy

SPECIAL EDUCATION (Optional)

OBJECTIVES OF COURSE

03 CH

The purpose of this course is to provide critical information needed to understand students with disabilities. In addition to introductions of many basic concepts in special Education it covers the Etiology or causes of each disability, salient characteristics of each category in special Education and important issues of students, Teachers & Parents. It also provides knowledge regarding sports activities and rehabilitation program for special persons through physical activities with teaching methods useful for special people to adjust in the society.

COURSE CONTENTS

WEEK WISE BREAKDOWN

Week	Topic/Activity
1	INTRODUCTION TO SPECIAL EDUCATION Key Terms Individual Differences History of Special Education Special Education: Professional Preparation Standards Conclusion Discussion Question
2	STUDENTS WITH COMMUNICATION DISORDERS Key Terms Definitions Typical Development of Speech & Language Disorders of Speech & Languages
3	STUDENTS WITH COMMUNICATION DISORDERS Differences of Speech & Language Characteristics & Etiology Identification Process Issues of Importance Discussion Questions
4	STUDENTS WITH MENTAL RETARDATION OR DEVELOPMENTAL DISABILITIES Key Terms Definitions Characteristics Etiology Identification Process Issues of Importance Discussion Questions
5	STUDENTS WITH LEARNING DISABILITIES Key Terms Definitions

	Characteristics Etiology Identification Process Issue of Importance Discussion Questions
7	STUDENTS WITH EMOTIONAL AND BEHAVIORAL DISORDERS Key Terms Definitions Characteristics Etiology Identification Process Issue of Importance Discussion Question
8	STUDENTS WITH PHYSICAL AND HEALTH IMPAIRMENTS Key Terms Definitions Characteristics Etiology Identification Process Issue of Importance Discussion Question
9	STUDENTS WITH HEARING IMPAIRMENTS Key Terms Definitions Characteristics Etiology Identification Process Issue of Importance Discussion Question
10	STUDENTS WITH HEARING IMPAIRMENTS Key Terms Definitions Characteristics Etiology Identification Process Issue of Importance Discussion Question
12	STUDENTS WITH VISUAL IMPAIRMENTS Key Terms Definitions Characteristics Etiology
13	STUDENTS WITH VISUAL IMPAIRMENTS Identification Process Issue of Importance Discussion Question Key Terms

	Definitions Characteristics Etiology
14	TEACHING STUDENTS WITH SPECIAL NEEDS IN SECONDARY SCHOOLS Key Terms Definitions Characteristics Etiology Identification Process Issue of Importance Discussion Question
16	Case Study / Project Special Education
17	Review
18	Examination

RECOMMENDED BOOKS

1. Dr. Waheed Mughal, Physical Education for Special Needs, 2014
2. Tom E.C. Smith and all, Teaching students with special needs 2011 New Delhi
3. Margaret G. Werts and all, Fundamentals of Special Education 2011 New Dehli
4. Shekar, K.C. Adapted Physical Education, New Delhi: Khel Sahitya Kendra, 2005,
5. Jain, Anoop, Adapted Physical Education, New Delhi: Sports Publication, 2003.
6. Misra, Bhawana, Handbook of Teaching Disabled, New Delhi: Mohit, 2002.
7. Seamus Hegarty Mithu Alur, Education and Children with Special Needs, Sage Publications 2002 India.
8. Rao, V.K., Special Education, New Delhi: A.P.H., 2001.

CURRICULUM PLANNING AND DEVELOPMENT IN PHYSICAL EDUCATION: (Optional)

OBJECTIVES OF COURSE

03 CH

The course of curriculum planning and development in physical education is designed to acquaint the students with the historical perspective, theories, kinds, and concepts of curriculum. It also gives the information regarding curriculum planning and development with its process. National Education Policies also come under the purview of this course. It would also enable the scholars to evaluate and design/construct Physical Education Curriculum at different stages from primary to graduate/postgraduate level

COURSE CONTENTS

WEEK WISE BREAKDOWN

Week	Chapter Name/Topics
1	Introduction to Curriculum: Introduction, Definitions of Curriculum, Concepts of Curriculum, Conventional Meaning of Curriculum, Modern Concept of Curriculum,
2	Islamic Concept of Curriculum, Comparison of Old & Modern Curriculum, Types of Curriculum, Need of Curriculum
3	Foundations of Curriculum Development: Historical Perspective, Philosophical Sources/Foundations, Philosophical Theories of Curriculum,
4	Psychological Foundation, Sociological Foundation of Curriculum
5	Curriculum Planning and Development: Basic Principles of Curriculum Development, Process of curriculum Development, Major Tasks of Curriculum Development
6	Effective Curriculum Planning, Principles of Desirable Curriculum, Factors effecting Curriculum Planning, Curriculum making and Implementing
7	Process of Curriculum Development in Psychical Education: Need of Planning, Setting for Curriculum Development, Steps of Curriculum Development,

8	Situation analysis in Curriculum Development, Significance of Situation Analysis in Curriculum Development, Formation of Objectives
9	Sources of Aims, Goals & Objectives of Phy.Edu / Education, Types of Objectives, Features of Effective Objectives, Selection of Contents
10	Curriculum Development in Pakistan: National Commission on Education 1959, Education Policies 1972, 1978, 1998, 2009, Development Process
11	Scheme of Studies / Curriculum in Physical Education – I: Salient Features/Benchmark for: Class VI-VIII,
12	Salient Features/Benchmark for: Class IX- X, Construction of Lesson Plans in Gymnastics / Sports
13	Scheme of Studies / Curriculum in Physical Education – II: Salient Features/Benchmark for: Higher Secondary Level, Bachelor's Level, Master's Level
14	Curriculum Design: Introduction, Concept of Curriculum Design, Principles of Curriculum Design, Need of Curriculum Design, Steps in Curriculum Design, Selection Criteria of Design Program
15	Evaluation of Curriculum: Introduction/Definition, Types of Evaluation, Curriculum Evaluation: Problems & Issues in Curriculum Development, Factors affecting Curriculum Development
16	Revision
17	Final Examination

RECOMMENDED BOOKS

1. Dr. A. Waheed Mughal; Planning & Development of Curriculum in Physical Education, Islamabad, 2011
2. Carl E Willgoose, The curriculum in physical education prentice Hall, Inc, Englewood Cliffs, New Jersey, 1994.
3. Anderson. Van Dyke, Secondary School Administration Houghton Mifflin Company, Boston, New York.
4. Charles A Bucher, K Foundations of Phy: Edu: The C.V. Mosby, St. Louis, Toronto, London, 1979.

5. The New Elementary School Curriculum 2012 by MACMILLAN
6. Books Curriculum Grows 2000 by Prof. Connolly
7. Education Books & Curriculum by Laurelwood 2012
8. Curriculum Constructional by Laurie Brady 2010 Australia
9. Educator Guide 2015 By NASA
10. Dr. A. Waheed Mughal (2013) Curriculum Development & Planning in Phy.Edu.

MEDIA MANAGEMENT AND SPORTS MARKETING

WEEK-WISE BREAK DOWN

Week	Topics / Activities	Chapter
	Management	
1	Introduction to Management, Four Functions of Management (Planning, Organizing, Leading, Controlling), Levels of Management.	
2	Determination of objectives and goals, effective goal settings, management by objectives, Hierarchy of Needs, Leadership, SWOT.	
Media Management		
3	Introduction to Media, Objectives of Media, Kinds of Media	
4	Newspaper Management, Radio Management	
5	TV Management, Social Media & Sports	
6	News Agencies, Public Relations, Sports Writing	
7	Case Studies	
8	Mid Term Exam	
Marketing		
9	Understanding Marketing and the marketing process: What is marketing, marketing management, marketing evolution Marketing environment: macro environment, micro environment, responding to marketing environment.	
10	Market segmentation: Targeting and positioning for competitive advantage, market targeting. Price, Importance of Price, Pricing Objectives, Factors affecting Price.	
11	Case Studies	
Media Marketing		
12	Media Marketing, Means of Media Marketing, Functions of Media Marketing, Kinds of Media Marketing	
13	Advertising, Kinds of Advertising, Structure of Advertising Agencies, Impact of Advertising, Major principles of Advertising	
14	Case Studies	

Sales/Sponsorship		
15	What is sales and sponsorship, different kinds of sales and sponsorship, objectives, outcomes, difference between national and internal levels of sales and sponsorships, impact of sales and sponsorship on sports?	
16	Case Studies / Course Revision	
17	Final Term Exam	

Recommended Books

1. Essential of Management by Harold Koontz
2. Essentials of Marketing by Manmohan Joshi
3. Exploring Journalism by Mirza Muhammad Yousuf
4. Journalism for All by Dr. Mehdi Hassan and Abdus Salam Khurshid
5. Television and Radio Broadcasting by R.C.Ramanujam
6. TV Journalism by Navodita Pande

LEADERSHIP: THEORY AND PRACTICE

Course description

03 CH

This course provides an opportunity for practitioners and students to focus on leadership in the sports profession from both theoretical and practical perspectives. The course employs theoretical concepts and models, coupled with case studies based on the experiences of leaders within the profession to understand how to develop leadership potential in oneself and others.

Course Outline

Leadership theory, principles and practices;
Communication and diversity in organizations and in a global society;
Recurring professional and leadership issues within the local, national, and international structure of the Sports, Health and Physical Education professions.

WEEK-WISE BREAKDOWN

Week	Topic/Activities	
2	Traits, Motives, and Characteristics of Leadership	
3	The influence of Heredity: strength and limitations of Trait approach	
4	Charismatic and Transformational Leadership	
5	The development of Charisma: Transformational leadership: concern about Charismatic leadership	
6	Effective Leadership behaviors and attitudes, leadership styles	
7	Influence tactics of leaders, Contingency and situational Leadership	
8	Gender differences in leadership styles	
9	Mid-Term Exam	
10	Motivation and Coaching skills	
11	Communication and conflict Resolution skills	
12	Strategic leadership: Leadership development, succession and the future	
13	Leadership & sports Sciences	
14	Professional and leadership issues within the local and national structure of the Sports, Health and Physical Education profession.	

15	Professional and leadership issues within the international structure of the Sports, Health and Physical Education profession	
16	Recap	
17	Final Term Examination	

Recommended learning Resources

1. Roberts, S. and Rowley, J. (2008). *Leadership: The challenge for the information profession*. London: Facet Publishing.
2. Andrew J. Durbin (1998). *Leadership: Research, findings, practice and skills*, Houghton Mifflin Company
3. Marquardt, M. J., & Marquardt, M. (2011). *Optimizing the Power of Action Learning: Real-Time Strategies for Developing Leaders, Building Teams and Transforming Organizations*. Nicholas Brealey Publishing.
4. DeRue, D. S., & Wellman, N. (2009). Developing leaders via experience: the role of developmental challenge, learning orientation, and feedback availability. *Journal of Applied Psychology*, 94(4), 859.
5. Eley, D., & Kirk, D. (2002). Developing citizenship through sport: The impact of a sport-based volunteer programme on young sport leaders. *Sport, Education and Society*, 7(2), 151-166.
6. Maxwell, J. (2003). *Developing the leaders around you: How to help others reach their full potential*. Thomas Nelson Inc.
7. Zaleznik, A. (2004). *Managers and Leaders*. Harvard Business Review.
8. Ruvolo, C. M., Peterson, S. A., & LeBoeuf, J. N. (2004). Leaders Are Made, Not Born< em> The Critical Role of a Developmental Framework to Facilitate an Organizational Culture of Development. *Consulting Psychology Journal: Practice and Research*, 56(1), 10.

Computer Applications in Sports Sciences

Course Mission

03 CH

This course has been designed for the students of Sports Sciences keeping in consideration their on hand skills related to computing. This course satisfies the core requirement of computing course, therefore, this course has been recommended as one of the basic course for Sports Sciences students.

Course Objectives

There are three major objectives of this course which include:

To impart all basic knowledge of Computer Science

To enable students to work on their own on computers on related application software's and they will be able to use it for rest of their lives.

To encourage students to make extensive use of computer technology in the field of sports sciences in order to compete with in and out of the country.

Course Description

This course is designed recently to better cater to the needs of Sport Sciences students at Sarhad University so that they can use computers extensively during their studies here, and most likely, will continue to use them even after they graduate. The course aims to convert students into sophisticated power-users, who can comfortably use their computers. However, we aim to do so without burdening students with useless details that have little utility from a user's perspective. The course will provide a general overview of the computer science disciplines, as well as an introduction to basic application tools like, MS Word, MS Excel, MS PowerPoint and other related software which can help sports sciences graduates in their field and academia. To built the interest of students in computer science special lecture series on some of the interesting areas of research and innovation in computing sciences will be arranged during the semester.

Learning Outcomes

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

- Understand how information technology aids decision-making
- A thorough understanding of a user-level view of computers, and their role in the society.
- Demonstrate a knowledge of computer hardware and software, including "multimedia," and be familiar with the legal, ethical and privacy issues relating to the use of hardware and software in a business environment.
- The ability to use computers to enhance productivity, regardless of the environment they are going to work

- An overall understanding of the area of computer science, including interesting research areas like computer graphics, networks and artificial intelligence.
- An introduction to some sports related current software's.
- The ability to create documents in MS Word and MS Power Point and will be able to process data in MS Excel.
- The ability to browse through different websites, blogs and social media and their effective use along with Email System.
- The ability to install downloaded or purchased software, and understand issues like privacy and computer viruses.
- An understanding of enough basic specs and components of computers to make reasonable purchase decisions, along with working knowledge of hardware components.

Credit and Contact Hours

This is a 3 credit hour course. 2 credit hours for theory lectures (two hours of lecture will be delivered in each week of the semester except the week reserved for mid semester examination as per university academic calendar, normally this week is 9th or 10th week of a semester). 1 credit hour laid for lab work will be equivalent to 3 contact hours in lab each week except week reserved for mid semester examination.

Regular lectures will be of two types: theory lectures and lab lectures. In theory lectures, we will cover the related topics of textbook and will provide students with an overview of computer science. In lab lectures, we will discuss software applications and other computer skills along with hardware of computer system. The lab lecture will support the labs, because material covered in it will be essential to complete the lab assignments.

Before Theory class and Lab work students are required to undergo the topic as per course outline given to them in orientation/1st lecture of the subject. Some seminars/group discussions will also be arranged to give you overview of activates happening in the field of computer science.

WEEK-WISE BREAKDOWN

Week	Topics / Activities
1	Over view of course line. Fundamentals of Information Systems, Introduction to Computer System, CPU computer peripherals, Anatomy of Digital Computers Lab: Demonstration of computer peripherals
2	Classification of Computers, Computer Software and software developments (types Nature and quality), Computer languages, Operating Systems End user applications, systems software Lab: Overview of different system software's and Application Software
3	Introduction to Telecommunications Internet and Intranet, email, blogs, social media Lab: Overview of different networking products and web sites
4	Computer in Sports a Historical Background Use of Artificial Intelligence in Sports Overview of Computer Application for Sport: SMART- system Case Study: SMART - system
5	Computer Applications in Physical Education – II (Skill Assessment) Computer Applications in Physical Education – III (Skill Assessment Techniques, Diet Analysis) Computer Applications in Physical Education – IV (game situations, game analysis) Review and Discussion of Implications of Computer Technology for Physical Education
6	Microsoft Word: Overview of MS Office Lab: Getting Familiar with Interface, Toolbars, Menu bars, Help files. File menu: New, Open, Save, Templates, Wizards, Setup Insert Menu: Page/ Section breaks, Page number, fields, Files, Clip-arts, Pictures, symbols, Word Art, Format Menu: Fonts, Paragraphs, bullets, Columns, Important paragraph styles, defining new styles, modifying existing styles, managing styles, Font styles, Style organizer
7	View & Edit Menus: Find, Replace, Header/ Footer, Toolbars Tools: Mail merging, Customize, Options, Macros Table Menu: Inserting, Formatting, Formulae,
8	Handling master / sub documents, Equation writer, Drawing, Sorting Case Study: Application of the learnt skills

9	Microsoft Excel: Overview of MS Excel Lab: Getting Familiar with Interface, Concept of a spreadsheet, Insertion, Deletion and Copying of sheets, Cell identification, Addressing, Formatting
10	MID SEMESTER EXAMINATION
11	Insert, Delete, Shift, Copying, Blocks, Hide Rows & Columns Formulae, Functions, Page setup
12	Sorting, Filtering, Use of Excel for comparison of lists Use of Excel for cleaning of lists
13	Charts, Graphs and their formatting, Printing, Case Study: Application of the learnt skills
14	Microsoft PowerPoint: Overview of MS PowerPoint Lab: Getting Familiar with Interface ,Layouts and background selection for slides, Slide sorter
15	Animation and custom show, insertion of photographs and videos, Printing Case Study: Application of the learnt skills
16	Review of Course
17-18	Final Examinations

Recommended Text Book

1. *"Introduction to Computers"* by Peter Norton, 6th Edition, McGraw-Hill SiE, ISBN 0-07-059374-4.
2. User Manual of MS Office and Handouts of the use of MS Word, Excel and PowerPoint.
3. Sports Leadership, 2007 Australian Institute of Sports, Sydney
4. Training Theory, 2011 Dr. Waheed Mughal

TRAINING METHODS, THEORIES & TRAINING PLANNING

OBJECTIVES

3 CH

The course of Training Methods, Theories and Training Planning focuses on the students so to enable them to have more comprehensive understanding of relationship of Theory & practice of Training Methods. The purpose of this course is to rectify their concepts & to provide opportunities for meaningful understanding of Training Methodologies, Training Principles, Motor Learning, short term and long term planning with micro mezzo and macro cycles constructions. Furthermore the Coach, Athlete and Parent relationship would also be under discussion in this course which would provide adequate knowledge to the Coaches to make the training process interesting and meaningful.

COURSE CONTENTS

WEEK WISE BREAKDOWN

Week	Topic/Activity
1	Concepts of General Theory of Training Task & Objectives Understanding of Sports Training and its terminologies
2	Principle of Training a. Law of Overload b. Super Compensation c. Law of Reversibility Law of Specificity
3	Training Methods Continuous Training Fartlek Training Method Circuit Training Method
4	Training Methods Cross Training Method Interval Training Strength Training
5	Strength & Power Training Maximum Strength, Elastic strength, Strength Endurance Development of Strength
6	Endurance & Endurance Training Endurance: Aerobic Endurance, Anaerobic Endurance, short Middle & Long Time Endurance

	Development of Endurance Exercises using body weight Exercise with medicine balls
7	Case Study Project
8	Speed & Speed Development Introduction Reaction speed Cyclic speed Elastic Speed Development of Speed Flexibility through Stretching Flexibility through Different Exercises Development of Coordination
9	Mid Term Examinations
10	Training Laws Heredity Development age Training age Law of validity Active Involvement
11	Planning the Training Program Periodization Volume & Intensity Preparation period Competition period Transition period
12	Construction of Weekly Training Plan Construction of Micro cycle Planning the Training Session Warm up, Skills Unit, Fitness Unit, Cool Down & Evaluation
13	Case Study Project
14	Long Term Planning/Systemization Foundation Training Building up Training High Performance Training
15	Case Study Project
16	Review
17	Examination

Recommended Books

1. Chandra Shaker (2004): Sports Training New Gyan offset Printers New Delhi
2. A. Waheed Mughal (2006-07): Science of Sports Training F Maz G-9, Islamabad, Pakistan
3. Peter Jal Thamsom (1991): "Introduction to Coaching Theory" International & Amateur Athletic Federation, Marshal Arts Print Services Ltd., West Sussex, R.H 13 8 AU England
4. "The Olympic Movement": by Lausanne, Switzerland, 1994 (I.O.C)
5. A.Waheed Mughal (2012) Theory of Training Islamabad

NUTRITION & ATHLETIC PERFORMANCE

Course Description: This course covers the essentials of human nutrition that improve and sustain optimal performance for sport and exercise. The effects of eating disorders (in both male and female athletes), weight management, and sport nutrition resources are also discussed.

COURSE OBJECTIVES

After successfully completing this course you will be able to

- identify the basic functions of macronutrients and micronutrients and describe their function in sport performance;
- describe the basics of nutrient timing, including how often athletes should eat, eating before during and after exercise, and how nutrient timing affects performance and body composition;
- discuss an athlete's basic fluid needs, including how fluids facilitate metabolism, how dehydration affects sport performance, and how caffeine and alcohol can adversely affect performance;
- list the most common dietary supplements and ergogenic aids as they apply to sport;
- evaluate the research behind, applications for, and potential risks associated with dietary supplements;
- identify athletes who present with eating disorder symptoms and know appropriate resources for referral;
- discuss the principles of body composition testing and testing methods as they apply to athletes;
- be able to identify the difference between nutrition concepts that are grounded in myth (fad diets) and facts (nutrition science);
- identify athletes who present with eating disorder symptoms and know appropriate resources for referral; Understand the risk factors for disordered eating and how to minimize any athletes' potential risk;
- identify the components of the female athlete triad and nutrition treatment guidelines; and

- list the 10 core principles of Intuitive Eating and how they relate to a non-diet approach to health.

WEEK WISE BREAKDOWN

Week	Topics
1,2	<u>Introduction to Sports Nutrition</u> <u>Importance of Nutrition in Sports</u> Sport Nutrition as compared to Healthy Nutrition- Food as Fuel <u>Functions of Food</u> Food Pyramid for Athletes The Nutrition Professional- Exercise and Nutrition Certifications
3,4	<u>Energy for Human Nutrition (Emily)</u> Introduction to Energy Conversion of Food to Energy Energy Systems Measurement of Energy Expenditure (BMR/BMI) How Energy is released from food and stored in the body
5,6	<u>Macro Nutrients</u> Carbohydrates Fats Proteins Carbohydrate loading Need of Carbohydrates, Fats and Proteins Carbohydrates and Fats as determinant of Athletic performance
7,8	Fluid balance and exercise Water and its Functions The boys need for fluids Fluid Intake for maximizing Athletic performance Fuels used during exercise Low Intensity Sub-Maximum Intensity Maximum Intensity Temperature Regulations during exercise
9	Mid Term Examinations
10,11	Energy for Human Nutrition The muscles and Energy Exercise Duration Fatigue and Its Causes
12	<u>Vitamins and Minerals</u> Vitamins and "energy"

	<p>Antioxidants</p> <p>Critical Minerals in Sport</p> <p>Effects of Vitamins, Iron and Calcium supplementation on Athletic Performance</p>
13	<p><u>Weight Management and Body Composition in Sport</u></p> <p>Safe, effective weight loss, consequences of rapid weight loss</p> <p>Weight gain</p> <p>Intuitive/Mindful Eating</p> <p>Body Composition and Athletic Performance</p> <p>Application of body composition in nutrition practice</p> <p>How nutrient timing effects body composition</p>
14	<p><u>Current Ergogenic Aids</u></p> <p>Research methods</p> <p>Popular sport-enhancing agents</p> <p>Select and Evaluate an Ergogenic Aid, Research Project</p>
15	<p><u>Nutrient Timing</u></p> <p>Nutrition prior to exercise,</p> <p>Nutrition during exercise,</p> <p>Nutrition after exercise</p>
16	<p><u>Latest Issues in Sport Nutrition</u></p> <p>Diabetic Patients and Athletic Performance</p> <p>Sports Anemia and its impact on Athletic Performance</p> <p>Nutrition Advice for Young Athletes</p> <p>Nutrition for Healing</p>

TALENT IDENTIFICATION & DEVELOPMENT IN SPORTS

OBJECTIVES OF COURSE

(3 Credit Hours)

This course will provide opportunities to familiarize students with the talent in sports and how to develop it on scientific basis. This course will help a sportsman to enhance performance. It will help to a common person, Managers, Coaches and parents to know about the stages and phases of talent development of athletes that ultimately lead towards sporting excellence.

COURSE CONTENT

WEEK WISE BREAKDOWN

Week	Topic/Activity
1	Talent Identification & Development (TID) Introduction Sports Talent Historical perspective British
2	Talent Identification & Development (TID) South Africa India Russia Germany/Europe
3	Games & Sports Kinds of Games & Sports Objective of Games & Sports Benefits of Games & Sports
4	Stages of Talent Identification Talent Detection Talent Identification Talent Development Talent Selection
5	Stages of Talent Development Bloom's Model of Staged Development Stages
6	Stages of Talent Development Initiation Development Perfection
7	Role of Coaches in Talent Identification & Development Role of Coach Coaching Philosophy

8	Role of Coaches in Talent Identification & Development What is coaching Coaching Styles
9	Mid Term Examination
10	Growth & Development Stages of Growth & Development (male/female) Physical Development Pattern Growth in Size Pattern Growth in Proportion
11	Case Study and Project
12	Growth & Development Difference between Boys & Girls Early & Late Developers Children & Exercise Children Basic Movements Principles of Structuring Practice
13	Test/Evaluation in Talent Identification General Information Physiological Aspects of Talent Psychological Aspects of Talent
14	Test/Evaluation in Talent Identification Technical/Tactical Aspects of Talent Identification Experts Finding in Talent Identification Suggestion for a Talent Identification Program Talent Assessment Form
15	Career Development International Model Pakistani Model International Model Pakistani Model
16	Review
17	Examination

Recommended Books

1. Dr. A.Waheed Mughal, Talent Identification, 2014, Islamabad
2. Handbook of Sports Psychology (3rd Ed.) by G. Tenenbaum and R.C. Eklund, Bloom, B.S. & Sonsniak, L.A. (1985)
3. Developing talent in young people New York: Ballantine Books.
4. Handbook of Sports Psychology (2nd Ed.) by R.N. Singer New York: John Wiley & Sons. Hohmann, A & Seidel, I (2003)
5. Scientific aspects of talent development; International Journal of Physical Education, 40, 9-20

6. Handbook of research in Sports Psychology by R. Singer M. Murphy & L.K. Tennant (Eds) New York: MacMillan Williams A & Reilly, T. (2001)
7. Talent Identification and development in soccer, Journal of Sports Sciences, 18, 657-667. Williams, A & Franks, A (1998)
8. Talent Identification in soccer, Sports Exercise and Injury, 4, 159-165 Cote, J. (1999)

ANNEXURE - A

English I (Functional English)

Objectives: Enhance language skills and develop critical thinking.

Course Contents

Basics of Grammar
Parts of speech and use of articles
Sentence structure, active and passive voice
Practice in unified sentence
Analysis of phrase, clause and sentence structure
Transitive and intransitive verbs
Punctuation and spelling

Comprehension

Answers to questions on a given text

Discussion

General topics and every-day conversation (topics for discussion to be at the discretion of the teacher keeping in view the level of students)

Listening

To be improved by showing documentaries/films carefully selected by subject teachers

Translation skills

Urdu to English

Paragraph writing

Topics to be chosen at the discretion of the teacher

Presentation skills

Introduction

Note: Extensive reading is required for vocabulary building

Recommended Books

1. **Functional English**
 - a) Grammar

1. Practical English Grammar by A. J. Thomson and A. V. Martinet. Exercises 1. Third edition. Oxford University Press. 1997. ISBN 0194313492
 2. Practical English Grammar by A. J. Thomson and A. V. Martinet. Exercises 2. Third edition. Oxford University Press. 1997. ISBN 0194313506
- b) Writing
1. Writing. Intermediate by Marie-Christine Boutin, Suzanne Brinand and Françoise Grellet. Oxford Supplementary Skills. Fourth Impression 1993. ISBN 0 19 435405 7 Pages 20-27 and 35-41.
- c) Reading/Comprehension
1. Reading. Upper Intermediate. Brian Tomlinson and Rod Ellis. Oxford Supplementary Skills. Third Impression 1992. ISBN 0 19 453402 2.
- d) Speaking

English II (Communication Skills)

Objectives: Enable the students to meet their real life communication needs.

Course Contents:

Paragraph writing

Practice in writing a good, unified and coherent paragraph

Essay writing

Introduction

CV and job application

Translation skills

Urdu to English

Study skills

Skimming and scanning, intensive and extensive, and speed reading, summary and précis writing and comprehension

Academic skills

Letter/memo writing, minutes of meetings, use of library and internet

Presentation skills

Personality development (emphasis on content, style and pronunciation)

Note: documentaries to be shown for discussion and review

Recommended Books**Communication Skills**

- a) Grammar
 - 1. Practical English Grammar by A. J. Thomson and A. V. Martinet. Exercises 2. Third edition. Oxford University Press 1986. ISBN 0 19 431350 6.
- b) Writing
 - 1. Writing. Intermediate by Marie-Christine Boutin, Suzanne Brinand and Françoise Grellet. Oxford Supplementary Skills. Fourth Impression 1993. ISBN 019 435405 7 Pages 45-53 (note taking).
 - 2. Writing. Upper-Intermediate by Rob Nolasco. Oxford Supplementary Skills. Fourth Impression 1992. ISBN 0 19 435406 5 (particularly good for writing memos, introduction to presentations, descriptive and argumentative writing).
- c) Reading
 - 1. Reading. Advanced. Brian Tomlinson and Rod Ellis. Oxford Supplementary Skills. Third Impression 1991. ISBN 0 19 453403 0.
 - 2. Reading and Study Skills by John Langan
 - 3. Study Skills by Richard York.

English III (Technical Writing and Presentation Skills)

Objectives: Enhance language skills and develop critical thinking

Course Contents**Presentation skills****Essay writing**

Descriptive, narrative, discursive, argumentative

Academic writing

How to write a proposal for research paper/term paper

How to write a research paper/term paper (emphasis on style, content, language, form, clarity, consistency)

Technical Report writing

Progress report writing

Note: Extensive reading is required for vocabulary building

Recommended Books

Technical Writing and Presentation Skills

- a) Essay Writing and Academic Writing
 1. Writing. Advanced by Ron White. Oxford Supplementary Skills. Third Impression 1992. ISBN 0 19 435407 3 (particularly suitable for discursive, descriptive, argumentative and report writing).
 2. College Writing Skills by John Langan. McGraw-Hill Higher Education. 2004.
 3. Patterns of College Writing (4th edition) by Laurie G. Kirszner and Stephen R. Mandell. St. Martin's Press.
- b) Presentation Skills
- c) Reading
The Mercury Reader. A Custom Publication. Compiled by Northern Illinois University. General Editors: Janice Neulib; Kathleen Shine Cain; Stephen Ruffus and Maurice Scharon. (A reader which will give students exposure to the best of twentieth century literature, without taxing the taste of engineering students).

ANNEXURE - B

Pakistan Studies (Compulsory)

Introduction/Objectives

- Develop vision of historical perspective, government, politics, contemporary Pakistan, ideological background of Pakistan.
- Study the process of governance, national development, issues arising in the modern age and posing challenges to Pakistan.

Course Outline

1. Historical Perspective

- a. Ideological rationale with special reference to Sir Syed Ahmed Khan, Allama Muhammad Iqbal and Quaid-e-Azam Muhammad Ali Jinnah.
- b. Factors leading to Muslim separatism
- c. People and Land
 - i. Indus Civilization
 - ii. Muslim advent
 - iii. Location and geo-physical features.

2. Government and Politics in Pakistan

Political and constitutional phases:

- a. 1947-58
- b. 1958-71
- c. 1971-77
- d. 1977-88
- e. 1988-99
- f. 1999 onward

3. Contemporary Pakistan

- a. Economic institutions and issues
- b. Society and social structure
- c. Ethnicity
- d. Foreign policy of Pakistan and challenges
- e. Futuristic outlook of Pakistan

Recommended Books

1. Burki, Shahid Javed. *State & Society in Pakistan*, The MacMillan Press Ltd 1980.

2. Akbar, S. Zaidi. *Issue in Pakistan's Economy*. Karachi: Oxford University Press, 2000.
3. S. M. Burke and Lawrence Ziring. *Pakistan's Foreign policy: An Historical analysis*. Karachi: Oxford University Press, 1993.
4. Mehmood, Safdar. *Pakistan Political Roots & Development*. Lahore, 1994.
5. Wilcox, Wayne. *The Emergence of Bangladesh*, Washington: American Enterprise, Institute of Public Policy Research, 1972.
6. Mehmood, Safdar. *Pakistan Kayyun Toota*, Lahore: Idara-e-Saqafat-e-Islamia, Club Road, nd.
7. Amin, Tahir. *Ethno - National Movement in Pakistan*, Islamabad: Institute of Policy Studies, Islamabad.
8. Ziring, Lawrence. *Enigma of Political Development*. Kent England: Wm Dawson & sons Ltd, 1980.
9. Zahid, Ansar. *History & Culture of Sindh*. Karachi: Royal Book Company, 1980.
10. Afzal, M. Rafique. *Political Parties in Pakistan*, Vol. I, II & III. Islamabad: National Institute of Historical and cultural Research, 1998.
11. Sayeed, Khalid Bin. *The Political System of Pakistan*. Boston: Houghton Mifflin, 1967.
12. Aziz, K. K. *Party, Politics in Pakistan*, Islamabad: National Commission on Historical and Cultural Research, 1976.
13. Muhammad Waseem, *Pakistan Under Martial Law*, Lahore: Vanguard, 1987.
14. Haq, Noor ul. *Making of Pakistan: The Military Perspective*. Islamabad: National Commission on Historical and Cultural Research, 1993.

**ISLAMIC STUDIES
(Compulsory)**

Objectives

This course is aimed at:

- 1 To provide Basic information about Islamic Studies
- 2 To enhance understanding of the students regarding Islamic Civilization
- 3 To improve Students skill to perform prayers and other worships
- 4 To enhance the skill of the students for understanding of issues related to faith and religious life.

Detail of Courses

Introduction to Quranic Studies

1. Basic Concepts of Quran
2. History of Quran
3. Uloom-ul-Quran

Study of Selected Text of Holly Quran

1. Verses of Surah Al-Baqara Related to Faith (Verse No-284-286)
2. Verses of Surah Al-Hujrat Related to Adab Al-Nabi (Verse No-1-18)
3. Verses of Surah Al-Mumanoon Related to Characteristics of faithful (Verse No-1-11)
4. Verses of Surah al-Furqan Related to Social Ethics (Verse No.63-77)
5. Verses of Surah Al-Inam Related to Ihkam (Verse No-152-154)

Study of Selected Text of Holly Quran

1. Verses of Surah Al-Ihzab Related to Adab al-Nabi (Verse No.6, 21, 40, 56, 57, 58.)
2. Verses of Surah Al-Hashar (18,19,20) Related to thinking, Day of Judgment
3. Verses of Surah Al-Saf Related to Tafakar, Tadabar (Verse No-1,14)

Seerat of Holy Prophet (S.A.W) I

1. Life of Muhammad Bin Abdullah (Before Prophet Hood)
2. Life of Holy Prophet (S.A.W) in Makkah
3. Important Lessons Derived from the life of Holy Prophet in Makkah

Seerat of Holy Prophet (S.A.W) II

1. Life of Holy Prophet (S.A.W) in Madina
2. Important Events of Life Holy Prophet in Madina
3. Important Lessons Derived from the life of Holy Prophet in Madina

Introduction to Sunnah

1. Basic Concepts of Hadith
2. History of Hadith
3. Kinds of Hadith
4. Uloom –ul-Hadith
5. Sunnah & Hadith
6. Legal Position of Sunnah

Selected Study from Text of Hadith

Introduction to Islamic Law & Jurisprudence

1. Basic Concepts of Islamic Law & Jurisprudence
2. History & Importance of Islamic Law & Jurisprudence
3. Sources of Islamic Law & Jurisprudence
4. Nature of Differences in Islamic Law
5. Islam and Sectarianism

Islamic Culture & Civilization

1. Basic Concepts of Islamic Culture & Civilization
2. Historical Development of Islamic Culture & Civilization
3. Characteristics of Islamic Culture & Civilization
4. Islamic Culture & Civilization and Contemporary Issues

Islam & Science

1. Basic Concepts of Islam & Science
2. Contributions of Muslims in the Development of Science
3. Quran & Science

Islamic Economic System

1. Basic Concepts of Islamic Economic System
2. Means of Distribution of wealth in Islamic Economics
3. Islamic Concept of Riba
4. Islamic Ways of Trade & Commerce

Political System of Islam

1. Basic Concepts of Islamic Political System
2. Islamic Concept of Sovereignty
3. Basic Institutions of Govt. in Islam

Islamic History

1. Period of Khlaft-E-Rashida
2. Period of Ummayyads

3. Period of Abbasids

Social System of Islam

1. Basic Concepts of Social System of Islam
2. Elements of Family
3. Ethical Values of Islam

Reference Books

1. Hameed ullah Muhammad, "Emergence of Islam", IRI, Islamabad
2. Hameed ullah Muhammad, "Muslim Conduct of State"
3. Hameed ullah Muhammad, "Introduction to Islam"
4. Mulana Muhammad Yousaf Islahi,"
5. Hussain Hamid Hassan, "An Introduction to the Study of Islamic Law" leaf Publication Islamabad, Pakistan.
6. Ahmad Hasan, "Principles of Islamic Jurisprudence" Islamic Research Institute, International Islamic University, Islamabad (1993)
7. Mir Waliullah, "Muslim Jurisprudence and the Quranic Law of Crimes" Islamic Book Service (1982)
8. H. S. Bhatia, "Studies in Islamic Law, Religion and Society" Deep & Deep Publications New Delhi (1989)
9. Dr. Muhammad Zia-ul-Haq, "Introduction to Al Sharia Al Islamia" Allama Iqbal Open University, Islamabad (2001)

ANNEXURE - D

Note: One course will be selected from the following six courses of Mathematics.

COMPULSORY MATHEMATICS COURSES FOR BS (4 YEAR)

**(FOR STUDENTS NOT MAJORING IN
MATHEMATICS)**

1. MATHEMATICS I (ALGEBRA)

Prerequisite(s): Mathematics at secondary level

Credit Hours: 3 + 0

Specific Objectives of the Course: To prepare the students, not majoring in mathematics, with the essential tools of algebra to apply the concepts and the techniques in their respective disciplines.

Course Outline:

Preliminaries: Real-number system, complex numbers, introduction to sets, set operations, functions, types of functions. *Matrices:* Introduction to matrices, types, matrix inverse, determinants, system of linear equations, Cramer's rule.

Quadratic Equations: Solution of quadratic equations, qualitative analysis of roots of a quadratic equations, equations reducible to quadratic equations, cube roots of unity, relation between roots and coefficients of quadratic equations.

Sequences and Series: Arithmetic progression, geometric progression, harmonic progression. *Binomial Theorem:* Introduction to mathematical induction, binomial theorem with rational and irrational indices. *Trigonometry:* Fundamentals of trigonometry, trigonometric identities.

Recommended Books

1. Dolciani MP, Wooton W, Beckenback EF, Sharron S, *Algebra 2 and Trigonometry*, 1978, Houghton & Mifflin, Boston (suggested text)

2. Kaufmann JE, *College Algebra and Trigonometry*, 1987, PWS-Kent Company, Boston
3. Swokowski EW, *Fundamentals of Algebra and Trigonometry* (6th edition), 1986, PWS-Kent Company, Boston

2. MATHEMATICS II (CALCULUS)

Prerequisite(s): Mathematics I (Algebra)

Credit Hours: 3 + 0

Specific Objectives of the Course: To prepare the students, not majoring in mathematics, with the essential tools of calculus to apply the concepts and the techniques in their respective disciplines.

Course Outline

Preliminaries: Real-number line, functions and their graphs, solution of equations involving absolute values, inequalities. *Limits and Continuity:* Limit of a function, left-hand and right-hand limits, continuity, continuous functions.

Derivatives and their Applications: Differentiable functions, differentiation of polynomial, rational and transcendental functions, derivatives.

Integration and Definite Integrals: Techniques of evaluating indefinite integrals, integration by substitution, integration by parts, change of variables in indefinite integrals.

Recommended Books

1. Anton H, Bevens I, Davis S, *Calculus: A New Horizon* (8th edition), 2005, John Wiley, New York
2. Stewart J, *Calculus* (3rd edition), 1995, Brooks/Cole (suggested text)
3. Swokowski EW, *Calculus and Analytic Geometry*, 1983, PWS-Kent Company, Boston
4. Thomas GB, Finney AR, *Calculus* (11th edition), 2005, Addison-Wesley, Reading, Ma, USA

3. MATHEMATICS III (GEOMETRY)

Prerequisite(s): Mathematics II (Calculus)

Credit Hours: 3 + 0

Specific Objectives of the Course: To prepare the students, not majoring in mathematics, with the essential tools of geometry to apply the concepts and the techniques in their respective disciplines.

Course Outline

Geometry in Two Dimensions: Cartesian-coördinate mesh, slope of a line, equation of a line, parallel and perpendicular lines, various forms of equation of a line, intersection of two lines, angle between two lines, distance between two points, distance between a point and a line.

Circle: Equation of a circle, circles determined by various conditions, intersection of lines and circles, locus of a point in various conditions.

Conic Sections: Parabola, ellipse, hyperbola, the general-second-degree equation

Recommended Books

1. Abraham S, *Analytic Geometry*, Scott, Freshman and Company, 1969
2. Kaufmann JE, *College Algebra and Trigonometry*, 1987, PWS-Kent Company, Boston
3. Swokowski EW, *Fundamentals of Algebra and Trigonometry* (6th edition), 1986, PWS-Kent Company, Boston

4. COURSE FOR NON-MATHEMATICS MAJORS IN SOCIAL SCIENCES

<i>Title of subject:</i>	MATHEMATICS
<i>Discipline</i>	: BS (Social Sciences).
<i>Pre-requisites</i>	: SSC (Metric) level Mathematics
<i>Credit Hours</i>	: 03 + 00
<i>Minimum Contact Hours:</i>	40
<i>Assessment</i>	: written examination;
<i>Effective</i>	: 2008 and onward

Aims : To give the basic knowledge of Mathematics and prepare the students not majoring in mathematics.

Objectives : After completion of this course the student should be able to:

- Understand the use of the essential tools of basic mathematics;
- Apply the concepts and the techniques in their respective disciplines;
- Model the effects non-isothermal problems through different domains;

Contents :

1. **Algebra**

Preliminaries: Real and complex numbers, Introduction to sets, set operations, functions, types of functions. *Matrices:* Introduction to

matrices, types of matrices, inverse of matrices, determinants, system of linear equations, Cramer's rule. *Quadratic equations*: Solution of quadratic equations, nature of roots of quadratic equations, equations reducible to quadratic equations. *Sequence and Series*: Arithmetic, geometric and harmonic progressions. *Permutation and combinations*: Introduction to permutation and combinations, *Binomial Theorem*: Introduction to binomial theorem. *Trigonometry*: Fundamentals of trigonometry, trigonometric identities. *Graphs*: Graph of straight line, circle and trigonometric functions.

2. **Statistics**

Introduction: Meaning and definition of statistics, relationship of statistics with social science, characteristics of statistics, limitations of statistics and main division of statistics. *Frequency distribution*: Organisation of data, array, ungrouped and grouped data, types of frequency series, individual, discrete and continuous series, tally sheet method, graphic presentation of the frequency distribution, bar frequency diagram histogram, frequency polygon, cumulative frequency curve. *Measures of central tendency*: Mean medium and modes, quartiles, deciles and percentiles. *Measures of dispersion*: Range, inter quartile deviation mean deviation, standard deviation, variance, moments, skewness and kurtosis.

Recommended Books

1. Swokowski. E. W., '*Fundamentals of Algebra and Trigonometry*', Latest Edition.
2. Kaufmann. J. E., '*College Algebra and Trigonometry*', PWS-Kent Company, Boston, Latest Edition.
3. Walpole, R. E., '*Introduction of Statistics*', Prentice Hall, Latest Edition.
4. Wilcox, R. R., '*Statistics for The Social Sciences*',

5. **MATHEMATICS FOR CHEMISTRY**

Credit Hours: 3

Prerequisites: Mathematics at Secondary level

Specific Objectives of Course:

To prepare the students not majoring in mathematics with the essential tools of Calculus to apply the concepts and the techniques in their respective disciplines.

Course Outline

Preliminaries: Real Numbers and the Real Line, *Functions and their graphs:* Polynomial Functions, Rational Functions, Trigonometric Functions, and Transcendental Functions. Slope of a Line, Equation of a Line, Solution of equations involving absolute values, Inequalities. *Limits and Continuity:* Limit of a Function, Left Hand and Right Hand Limits, Continuity, Continuous Functions. *Derivatives and its Applications:* Differentiation of Polynomial, Rational and Transcendental Functions, Extreme Values of Functions. *Integration and Indefinite Integrals:* Integration by Substitution, Integration by Parts, Change of Variables in Indefinite Integrals. Least-Squares Line.

Recommended Books

1. Thomas, Calculus, 11th Edition. Addison Wesley publishing company, 2005.
2. H. Anton, I. Bevens, S. Davis, Calculus, 8th edition, John Wiley & Sons, Inc. 2005.
3. Hughes-Hallett, Gleason, McCallum, et al, Calculus Single and Multivariable, 3rd Edition. John Wiley & Sons, Inc. 2002.
4. Frank A. Jr, Elliott Mendelsohn, Calculus, Schaum's Outline Series, 4th edition, 1999.
5. E. W. Swokowski, Calculus and Analytic Geometry PWS Publishers, Boston, 1983.
6. John H. Mathews, Numerical Methods for Mathematics Science and Engineering, Prentice-Hall, Second Edition 1992.

6. MATHEMATICS FOR PHYSICS

Contents

1. **Preliminary calculus.**
 - Differentiation
Differentiation from first principles; products; the chain rule; quotients; implicit differentiation; logarithmic differentiation; Leibnitz' theorem; special points of a function; theorems of differentiation.
 - Integration
Integration from first principles; the inverse of differentiation; integration by inspection; sinusoidal function; logarithmic integration; integration using partial fractions; substitution method; integration by parts; reduction formulae; infinite and improper

integrals; plane polar coordinates; integral inequalities; applications of integration.

2. Complex numbers and hyperbolic functions

- The need for complex numbers
- Manipulation of complex numbers
Additions and subtraction; modulus and argument; multiplication; complex conjugate; division
- Polar representation of complex numbers Multiplication and division in polar form
- de Moivre's theorem
Trigonometrical identities; finding the n th roots of unity; solving polynomial equations
- Complex logarithms and complex powers
- Applications to differentiation and integration
- Hyperbolic functions
Definitions; hyperbolic-trigonometric analogies; identities of hyperbolic functions; solving hyperbolic equations; inverses of hyperbolic functions; calculus of hyperbolic functions

3. Series and limits

- Series
- Summation of series
Arithmetic series; geometric series; arithmetico-geometric series; the difference method; series involving natural numbers; transformation of series
- Convergence of infinite series
Absolute and conditional convergence; convergence of a series containing only real positive terms; alternating series test
- Operations with series
- Power series
Convergence of power series; operations with power series
- Taylor series
Taylor's theorem; approximation errors in Taylor series; standard McLaurin series
- Evaluation of limits

4. Partial differentiation

- Definition of the partial derivative
- The total differential and total derivative
- Exact and inexact differentials

- Useful theorems of partial differentiation
- The chain rule
- Change of variables
- Taylor's theorem for many-variable functions
- Stationary values of many-variable functions
- Stationary values under constraints

5. Multiple integrals

- Double integrals
- Triple integrals
- Applications of multiple integrals
Areas and volumes; masses, centers of mass and centroids;
Pappus' theorems; moments of inertia; mean values of functions
- Change of variables in multiple integrals
Change of variables in double integrals;

6. Vector algebra

- Scalars and vectors
- Addition and subtraction of vectors
- Multiplication by a scalar
- Basis vectors and components
- Magnitude of a vectors
- Multiplication of vectors
Scalar product; vector product; scalar triple product; vector triple product
- Equations of lines and planes
Equation of a line; equation of a plane
- Using vectors to find distances
Point to line; point to plane; line to line; line to plane
- Reciprocal vectors

7. Matrices and vector spaces

- Vectors spaces Basic vectors; the inner product; some useful inequalities
- Matrices
- The complex and Hermitian conjugates of a matrix
- The determinant of a matrix
Properties of determinants
- The inverse of a matrix
- The rank of a matrix
- Simultaneous linear equations
N simultaneous linear equations in N unknowns

- Special square matrices
Diagonal; symmetric and antisymmetric; orthogonal; Hermitian; unitary normal
- Eigen vectors and eigen values
Of a normal matrix; of Hermitian and anti-Hermitian matrices; of a unitary matrix; of a general square matrix
- Determination of eigen values and eigen vectors Degenerate eigen values

8. Vector calculus

- Differentiation of vectors Composite vector expressions; differential of a vector
- Integration of vectors
- Space curves
- Vector functions of several arguments
- Surfaces
- Scalar and vector fields
- Vector operators
- Gradient of a scalar field; divergence of a vector field; curl of a vector field
- Vector operator formulae
- Vector operators acting on sums and products; combinations of grad, div and curl
- Cylindrical and spherical polar coordinates
- Cylindrical polar coordinates; spherical polar coordinates.

ANNEXURE - E

Statistics-I

Credit 3 (2-1)

Definition and importance of Statistics in Agriculture, Data Different types of data and variables

Classification and Tabulation of data, Frequency distribution, stem-and-Leaf diagram, Graphical representation of data Histogram, frequency polygon, frequency curve.

Measure of Central tendency, Definition and calculation of Arithmetic mean, Geometric mean, Harmonic mean, Median quantiles and Mode in grouped and un-grouped data.

Measure of Dispersion, Definition and Calculation of Range, quartile deviation, Mean deviation, Standard deviation and variance, coefficient of variation.

Practical

- a. Frequency Distribution
- b. Stem-and-Leaf diagram
- c. Various types of Graphs
- d. Mean, Geometric mean Harmonic Mean,
- e. Median, Quartiles Deviation, mean Deviation.
- f. Standard Deviation, Variance, Coefficient of variation,
- g. Skewness and kenosis

Recommended Books

1. Introduction to Statistical Theory Part- I by Sher Muhammad and Dr. Shahid Kamal (Latest Edition)
2. Statistical Methods and Data Analysis by Dr. Faquir Muhammad
3. A. Concise Course in A. Level Statistic with world examples by J. Crashaw and J. Chambers (1994)
4. Basic Statistics an Inferential Approach 2nd Ed. (1986) Fran II. Dietrich-II and Thomas J. Keans

Statistics-II

Credit 3 (2-1)

Sampling Probability and non-Probability Sampling, Simple random sampling stratified random sampling Systematic sampling error, Sampling

distribution of mean and difference between two means. Interference Theory: Estimation and testing of hypothesis, Type—I and type-II error, Testing of hypothesis about mean and difference between two means using Z-test and t-test, Paired t-test, Test of association of attributes using X² (chi-square) Testing hypothesis about variance.

Practical

- a. Sampling random sampling
- b. Stratified random sampling.
- c. Sampling distribution of mean
- d. Testing of hypotheses regarding population mean
- e. Testing of hypotheses about the difference between population means
- f. Chi-square test
- g. Testing of Correlation Coefficient
- h. Fitting of simple linear regression
- i. One-way ANOVA
- j. Two-way ANOVA

Recommended Books

1. Introduction to Statistical Theory Part-II by Sher Muhammad and Dr. Shahid Kamal (Latest Edition)
2. Statistical Methods and Data Analysis by Dr. Faquir Muhammad
3. Principles and Procedures of Statistics A Bio-material approach, 2nd Edition, 1980 by R. G. D Steal and James H. Tarric
4. Statistical Procedures for Agricultural Research 2nd Edition (1980) by K. A. Gomez and A. A. Gomez

ANNEXURE - F

Introduction to Information and Communication Technologies

Course Structure: Lectures: 2 Labs: 1 **Credit Hours: 3**
Pre-requisite: None **Semester: 1**

Course Description

This is an introductory course on Information and Communication Technologies. Topics include ICT terminologies, hardware and software components, the internet and World Wide Web, and ICT based applications.

After completing this course, a student will be able to:

- Understand different terms associated with ICT
- Identify various components of a computer system
- Identify the various categories of software and their usage
- Define the basic terms associated with communications and networking
- Understand different terms associated with the Internet and World Wide Web.
- Use various web tools including Web Browsers, E-mail clients and search utilities.
- Use text processing, spreadsheets and presentation tools
- Understand the enabling/pervasive features of ICT

Course Contents

Basic Definitions & Concepts

Hardware: Computer Systems & Components

Storage Devices, Number Systems

Software: Operating Systems, Programming and Application Software

Introduction to Programming, Databases and Information Systems

Networks

Data Communication

The Internet, Browsers and Search Engines

The Internet: Email, Collaborative Computing and Social Networking

The Internet: E-Commerce

IT Security and other issues

Project Week

Review Week

Text Books/Reference Books

1. Introduction to Computers by Peter Norton, 6th International Edition, McGraw-Hill
2. Using Information Technology: A Practical Introduction to Computer & Communications by Williams Sawyer, 6th Edition, McGraw-Hill
3. Computers, Communications & information: A user's introduction by Sarah E. Hutchinson, Stacey C. Swayer
4. Fundamentals of Information Technology by Alexis Leon, Mathews Leon, Leon Press.

RECOMMENDATIONS BS (4 –YEAR) PROGRAM

After discussions and detailed deliberations, the committee unanimously made following recommendations:

- i. Teacher being the key person in teacher-learning process, it is imperative that he/she should be aware of or have means to be aware of the latest developments in the field of Sports and Physical Education. In order to ensure this, it is strongly recommended that Higher Education Commission should hold refresher courses in coordination with Pakistan Sport Board/National Council for Health Physical Education & Sport Sciences of Pakistan (NCHPESS).
- ii. It is recommended that Higher Education Commission should procure funds to run BS (4 Years) Health and Physical Education program.
- iii. The linkage in both teaching and research disciplines is encouraged between the universities and sports organizations.
- iv. To implement the BS (4-Years) program the Government and Universities will have to provide extra facilities for teaching extra courses and for provision of latest equipment.
- v. The Provinces will have to be involved at the highest level for the implementation of BS (4-Years) program.
- vi. The committee is of unanimous opinion that the nomenclature of the discipline may be changed / replaced by Sports Sciences and Physical Education instead of Health and Physical Education, as being used globally.
- vii. The committee unanimously resolved that HEC may arrange annual meeting to review the courses and problems faced by the departments during the past 2 semesters in the completion of courses.
- viii. The committee strongly recommended that the changes which are made in the practical may be communicated to the concerned quarters for implementation.

RECOMMENDATIONS MS / MPhil PROGRAMS

1. The Committee unanimously proposed maximum New subjects for MS/MPhil course work as guidelines for the Universities offering MS/MPhil Programs in Physical Education/Sports Sciences.
2. Research, being an important component of the MS/MPhil Programs be given due importance and the HEC may provide all possible assistance to the newly established department of Physical Education in the Universities of different Provinces and AJK, imparting such education.
3. More opportunities of trainings, refresher course, workshops etc. be given to the faculty members of the Universities offering MPhil Programs and HEC may extend maximum support in realizing the above objective.
4. Efforts should be made to build working relationship among the sister Universities offering the research programs.
5. A mechanism should be developed to bring uniformity amount the departments offering MPhil Programs through HEC.

The meeting was ended with the vote of thanks to and by the Chair.