



**राष्ट्रीय खेल विश्वविद्यालय  
मणिपुर  
केन्द्रीय विश्वविद्यालय  
युवा कार्यक्रम एवं खेल मंत्रालय  
भारत सरकार**

**NATIONAL SPORTS UNIVERSITY  
MANIPUR, INDIA  
Central University  
Ministry of Youth Affairs and Sports  
Government of India**

**Bachelor of Science in Sports Coaching  
(B.Sc. Sports Coaching)  
Specialization: Shooting**

**SCHEME OF EXAMINATION, STRUCTURE & COURSE CONTENT**

**Four Years: Eight Semesters, Regular Degree Programme**

**Following UGC-CBCS Guidelines**

**2021-22 to 2024-25**

Department of Sports Coaching 28-09-2021

**Bachelor of Science in Sports Coaching****B. Sc. (Sports Coaching)****Specialization: Shooting****SEMESTER - I**

Course Code	Course Name	Credit	Teaching Hours	Internal Marks	External Marks	Total Marks
<b>THEORY COURSE</b>						
BSC/CC/101	Introduction to Sports Culture and Coaching	3	48	30	45	75
BSC/CC/102	Anatomy and Physiology	3	48	30	45	75
BSC/CC/103F	Historical Development and Organizational Structure: Shooting	3	48	30	45	75
BSC/GE/01	Introduction to Information Technology in Sports	2	32	20	30	50
BSC/AECC/01	English (Modern Indian Languages)	2	32	20	30	50
<b>LAB PRACTICAL</b>						
BSC/CC(P)/102	Anatomy & Physiology	1	32	10	15	25
BSC/GE(P)/01	Introduction to Information Technology in Sports	1	32	10	15	25
<b>SPORTS PRACTICAL</b>						
BSC/CCP/104F	General Conditioning and Performance – I: Shooting	4	128	50	50	100
BSC/CCP/105F	Practical: Shooting	6	192	75	75	150
<b>TOTAL</b>		<b>25</b>	<b>592</b>	<b>275</b>	<b>350</b>	<b>625</b>

**NCC will be included as per the UGC guidelines.**

NB: CC= Core Course, AECC=Ability Enhancement compulsory course,DSC= Discipline Specific Course, GE=Generic Elective, SECC= Skill Enhancement core course, CCP= Core course practical

## SEMESTER - I

### INTRODUCTION TO SPORTS CULTURE AND COACHING

COURSE CODE: BSC/CC/101

Course Code	Course Name	Credit	Teaching Hours	Internal Marks	External Marks	Total Marks
BSC/CC/101	Introduction to Sports Culture and Coaching	3	48	30	45	75

### COURSE LEARNING OUTCOMES

After completing this course, the students will able to

- Understand the Indian Sports Culture, its Philosophy and Culture Heritage.
- Understand role of Sports Competition to Create Sports Culture and impact on strengthening sports ecosystem
- Know about the origin of International and National Games and its organization and conduct role in Sports Culture Development
- Understand social impact of activities of Sports Associations, Institutions, Schemes and Awards.

### UNIT - I

#### Indian Sports Culture

- 1.1 Philosophy of Sport Culture, Sports as a Cultural Heritage
- 1.2 History of Exercise and Sports Science in ancient India
- 1.3 Sports and Games in India during British period and after Independence, Regional Sports Culture in India
- 1.4 Ancient history of games and sports in different continents

### UNIT-II

#### Role of Sports Competition to Create Sports Culture

- 2.1 Impact of Community Sports and Local Sports Competition
- 2.2 Significance of School, College and University Sports Competition
- 2.3 Importance of National and International SportEvents
- 2.4 Influence of League Competition

### UNIT-III

#### **Origin of International and National Games and its organization and conduct role in Sports Culture Development**

- 3.1 Olympic Games and Commonwealth Games: Values and Culture
- 3.2 Asian Games and SAF Games: Values and Culture
- 3.3 Major Sports International, World Competitions and Championship, World University Games
- 3.4 National Games, Khelo India, All India University Games, SGFI, Rural Sports in India and Major National Sports Events and League etc.

### UNIT-IV

#### **Sports Associations, Institutions, Schemes and Awards in India: Social impact**

- 4.1 Ministry of Youth Affairs and Sports and its Schemes, Sports Authority of India, NSNIS, National Sports University, LNIPE, NADA, NDTL, NYK
- 4.2 Indian Olympic Association – Objectives Structure and Functions, State Sports Association/Sports Academy: Objective Structure and function,
- 4.3 Corporate Sports Promotion. School, College and University Sports Culture
- 4.4 National, State and Sports Awards: Individual and Institutional, Financial scheme and support etc.

#### **SUGGESTED READING**

1. Deshpande S. H., Physical Education in Ancient India, Bharatya Vidya Prakashan, 1992.
2. Khan, Eraj Ahmed. History of Physical Education, Patna: Scientific Book Co.
3. Leonard, Fred Eugene and Affleck George B. Guide to The History of Physical Education, Philadelphia Leo & Febiger, 1962.
4. Majumdar D.C. Encyclopedia of India Physical Culture Baroda Good Companions, 1952.
5. Rajgopalan K. A. Brief History of Physical Education in India, Delhi Army Publisher 1962.
6. Rice Emmett, A. Hutchinson John L. and Lee Marbal A. Brief History of Physical Education. New York: The Ronald Press Co. 1960.
7. Singh Ajmer, et al. Modern Text Book of Physical Education Health & Sports, Kalyani Publisher.
8. Mondal S, Science of Exercise: Ancient Indian Origin, Journal of the Association of Physician of India, 2013.

**SEMESTER - I**  
**ANATOMY AND PHYSIOLOGY**  
**COURSE CODE: BSC/CC/102**

Course Code	Course Name	Credit	Teaching Hours	Internal Marks	External Marks	Total Marks
BSC/CC/102	Anatomy and Physiology	3	48	30	45	75

**COURSE LEARNING OUTCOME**

- Understand the Need and importance of anatomy and physiology in the field of physical education.
- To know the structure and function of cell and tissue and muscular system
- To understand classification of bone and joints.
- To understand circulatory and respiratory system, digestive and endocrine system, excretory and nervous system.

**UNIT - I**

**Introduction of Anatomy & Physiology**

- 1.1 Meaning, Definition, Need and importance of anatomy and Physiology in the field of physical Education and Sports science
- 1.2 Skeletal System, Classification of Bones, Function of bones, Types of Joints, Classification of joints and their functions.
- 1.3 Definition, Structure and Function of the Cell,
- 1.4 Tissue: Types and structure of Tissues, Organs and systems

**UNIT - II**

**Introduction of Muscular and Nervous System**

- 2.1 Muscular System: Gross Anatomy of Skeletal Muscles.
- 2.2 Types of Muscles and Muscle Contraction, Group action in skeletal muscles
- 2.3 Motor unit, functional types of skeletal muscles, muscles metabolism and fatigue
- 2.4 Nervous system: Central Nervous System, Peripheral Nervous Systems, function of nervous system.

**UNIT-III**

**Cardiovascular and Respiratory System**

- 3.1 Heart: its structure and function, Systemic and pulmonary circulatory system
- 3.2 Cardiac Cycle, Stroke volume, Cardiac output and Blood Pressure
- 3.3 Respiratory System: lungs, Respiratory tract, Mechanism of Respiration (internal and external respiration)
- 3.4 Exchanges of gases, Ventilation and lungs volumes, Pulmonary Volumes and Vital Capacity

**UNIT - IV**

- 4.1 Digestive System: Structure and Function
- 4.2 Endocrine System: Structure and Function
- 4.3 Excretory System: Structure and Function
- 4.4 Reproductive System: Structure and Function

## Practical

### Anatomy and Physiology Course CODE: BSC/CC (P)/102

Course Code	Course Name	Credit	Teaching Hours	Internal Marks	External Marks	Total Marks
BSC/CC(P)/102	Anatomy & Physiology	1	32	10	15	25

#### UNIT-I

- 1.1 Demonstration of cell, tissue, major muscles(origin and insertion) through video
- 1.2 Identification of human bones, Joints and its explanation by the students
- 1.3 Measurement of BP, resting heart rate and exercise heart rate
- 1.4 Measurement of Lungs volumes and Capacities

#### UNIT-II

- 2.1 Video presentation of digestive system and its explanation by the students
- 2.2 Video Presentation of endocrine gland its explanation by the students
- 2.3 Video Presentation of Kidney and urinary tract and its explanation by the students
- 2.4 Video Presentation of human Brain and its explanation by the students

#### SUGGESTED READINGS

1. Chaurasia B.D (2020) B D Chaurasias Handbook of General Anatomy, 6<sup>th</sup> edition, CBS Publisher.
2. Dr. A. Chandra Sekhar (2014) Handbook of Anatomy & Physiology, All India Publishers & Distributors; 2nd Edition
3. Elaine Marieb and Suzanne Keller (2017) Essentials of Human Anatomy & Physiology, Global Edition, Publisher-Pearson; 12th edition.
4. Fredric H. Martini, Michael J. Timmons Human Anatomy Prentice Hall, New Zealand 2000.
5. Garg K. (2020) Essentials of Anatomy and Physiology for GNM with Clinical Importance, Publisher - CBS Nursing.
6. Jamet Parker The Human Body Atlas Om Books Publication Comp. Inc. 2006.
7. Ken Ashwell The Student Anatomy of Exercise Manual MedTechan Imprint of Scientific International Pvt. Ltd., Australia 2012.
9. Moorthy, A. M. (2014). Anatomy physiology and health education. Karaikudi: Madalayam Publications.
10. Richard L. Drake Grays Anatomy for Students Elsevier Churchill Livingstone Comp. Inc., Philadelphia 2005.
12. Gerard J. Tortora and Bryan H. Derrickson (2017) "Tortora's Principles of Anatomy and Physiology" Publisher: Wiley ; 15th edition.
13. G.L. Khanna (2016) Exercise Physiology and Nutrition, Friends Publications (India); First edition.

## SEMESTER - I

### HISTORICAL DEVELOPMENT AND ORGANIZATIONAL STRUCTURE: Shooting

COURSE CODE: BSC/CC/103F

CourseCode	Course Name	Credit	Teaching Hours	Internal Marks	External Marks	Total Marks
BSC/CC/103F	Historical Development and Organizational Structure:Shooting	3	48	30	45	75

### ESSENCE OF THE COURSE

The course will enable the student to understand of how the game began and other important aspects of history and its turn over's. It also aims to provide students the knowledge about shooting ranges, equipments used in different events, coaching aspects, the organization and management of competition.

### COURSE LEARNING OUTCOME

After completing this course, the student will be able to

- Know about the history and development of the shooting sport.
- Know about the concept of sports coaching.
- Learn and be familiarize with the shooting ranges, equipments and accessories.
- Have knowledge about NRAI and ISSF organization and competition rules.
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#### UNIT--I

#### History and development of Shooting sports

- 1.1. Introduction to shooting sports.
- 1.2. History of shooting in India.
- 1.3. History of shooting Asia.
- 1.4. History of shooting World.

#### UNIT--II

#### Concept of Coaching

- 2.1. Historical development of sports coaching in India.
- 2.2. Development of Shooting coaching in India
- 2.3. Indian shooters performance in international and Olympic games
- 2.4. Shooting sports in Olympics

#### UNIT-III

#### 3. The fundamentals of safety

- 3.1 General safety .
- 3.2 Gun handling rules.
- 3.3 Additional safety requirements rules, hearing and eye protection.
- 3.4 Rules violation and penalties

## UNIT--IV

### 4. Organization and Management of Competition

- 4.1. Meaning, Definition and Importance of Organization, Administration and Management.
- 4.2. National Rifle Association of India (NRAI)-NRAI Competitions rule, organization, and management.
- 4.3. Guidelines for organizing ISSF championships.
- 4.4. Organization of shooting competition (National, State, District)



**SEMESTER - I**  
**INTRODUCTION TO INFORMATION TECHNOLOGY IN SPORTS**  
**COURSE CODE: BSC/GE/01**

Course Code	Course Name	Credit	Teaching Hours	Internal Marks	External Marks	Total Marks
BSC/GE/01	Introduction to Information Technology in Sports	2	32	20	30	50

**COURSE LEARNING OUTCOME**

**After completing this course, the students will be able to**

- Understanding the Concept of Information & Communication and Implement various scientific teaching aids
- Understand the versatile facilities on internet for source of knowledge
- Utilize the various modern Gadgets in sports

**COURSE CONTENTS**

**UNIT - I**

**Introduction to Information & Communication Technology**

- 1.1 Concept, Importance, Meaning & Nature of Information & Communication Technology.
- 1.2 Need of Information & Communication Technology in Physical Education; Scope of ICT in Education & Sport.
- 1.3 Teaching Learning Process, Publication, Evaluation, Research Administration.
- 1.4 Paradigm shift in Education due to ICT content with special reference to Curriculum.

**UNIT-II**

**Introduction to Internet Browsing**

- 2.1. Internet: Evolution, Protocols, Interlace Concepts, Growth of Internet, ISP; Internet Vs. Intranet.
- 2.2. Application. E-Mail: Concepts, POP and WEB Based E-mail, merits, address, Basics of sending & Receiving, E-mail Protocols, Mailing List, Free E-mail services.
- 2.3. Telnet Concept, Remote Logging, Protocols, Terminal Emulation. Message Board, Internet chatting voice chat text chat.
- 2.4. WORLD WIDE WEB (WWW) –History, working web browsers, its functions, concept of search Engines, Searching the Web, HTTP, URLs, Web Servers, Web; Protocols.

**UNIT – III**

**Modern Gadget and Technologies in Sports**

- 3.1. Introduction to sports gadgets and technologies.
- 3.2. Sports Gadgets: Heart Rate Monitor; Polar watches; Heddoko – Uniforms with sensors; Myovolt pads for sports therapy
- 3.3. Sports Technologies: Hawk-Eye Technology; Stump Camera in cricket; Goal Line Technology in Soccer; Radar Gun technology in Tennis
- 3.4 Information Technology-enhancing sports performance and maintenance.

## PRACTICAL

### Introduction to Information Technology in Sports

Course Code: BSC/GE (P)/01

Course Code	Course Name	Credit	Teaching Hours	Internal Marks	External Marks	Total Marks
BSC/GE(P)/01	Introduction to Information Technology in Sports	1	32	10	15	25

#### Unit -I

- 1.1. Basic Operation of Computers
- 1.2. Microsoft Office
- 1.3 Designing of own small apps and create new competence through available Software.
- 1.4 Access to Sports Analytics and Technology

#### UNIT -II

- 2.1. Demonstration of various Sports Analytical Software.
- 2.2. Demonstration of Hawk eye technology with computer analysis, Goalline technology analysis, Computerized sports performance analysis
- 2.3. IT technology in Video Analysis and Photo Analysis
- 2.4. Demonstration of designing techniques, tactics and strategies through software.

#### Suggested Reading

1. Irtegov, D. (2004). Operating system fundamentals. Firewall Media.
2. Marilyn, M. & Roberta, B. (n.d.). Computers in your future. 2nd edition, India: Prentice Hall. Milke, M. (2007). Absolute beginner's guide to computer basics. Pearson Education Asia. Sinha, P. K. & Sinha, P. (n.d.). Computer fundamentals. 4th edition, BPB Publication.
3. P.M. Heathcote (2000), 'A' Level Computing (4th ed), Payne-Gallway Publishers Ltd ISBN 1-903112-2
4. P.M. Heathcote (2000), 'A' Level ICT (2nd ed), Payne-Gallway Publishers Ltd ISBN 0-9532490-8-5
5. Tudor Dorothy and Tudor Ian (1997), Business Systems Development, NCC Education Services Limited ISBN 1-90234-305-0

## SEMESTER - I

### ENGLISH (MODERN INDIAN LANGUAGES)

Course CODE: BSC/AECC/01

Course Code	Course Name	Credit	Teaching Hours	Internal Marks	External Marks	Total Marks
BSC/AECC/01	English (Modern Indian Languages)	2	32	20	30	50

### COURSE LEARNING OUTCOME

After completing this course, the students will be able to

- Have an appreciable understanding of English grammar.
- Produce grammatically and idiomatically correct spoken and written discourse.
- Spot language errors and correct them.

#### UNIT-I

##### Parts of Speech

- 1.1 Nouns - different types; Pronoun - different types, Verbs – Tense - Concord - types of verbs
- 1.2 Adjectives – different types; Adverbs - different types, Prepositions - different types
- 1.3 Conjunctions - subordinating and coordinating
- 1.4 Determinatives articles - possessives - quantifiers

#### UNIT-II

##### Structure of English

- 2.1 Phrases - various types of phrases, Clauses - main and subordinate clauses
- 2.2 Basic sentence patterns in English - constituents of sentences, Complement – adverbials
- 2.3 Basic sentence patterns in English - various types of sentences – simple – compound – complex – declaratives – interrogatives – imperatives – exclamatory.
- 2.4 Analysis and conversion of sentences – Active to Passive and vice versa – Direct to Indirect and vice versa.

#### UNIT-III

##### Composition

- 3.1 Written Composition – Letter writing, Written Composition – Précis writing
- 3.2 Written Composition – Outline story, Written Composition - Expansion of proverb
- 3.3 Written Composition - Short essay
- 3.4 Written Composition – Email / Resume writing

### SUGGESTED READINGS:

1. Wren and Martin's High School English Grammar & Composition. S.Chand Publishing, 2018.
2. Cuttis, Martin. (2010) Oxford Guide to Plain English. Oxford University Press.

## SEMESTER – I

### GENERAL CONDITIONING AND PERFORMANCE – I: Shooting

Course Code: BSC/CCP/104F

Course Code	Course Name	Credit	Teaching Hours	Internal Marks	External Marks	Total Marks
BSC/CCP/104F	General Conditioning and Performance – I: Shooting	4	128	50	50	100

#### Learning Outcomes

- To understand general and specific warming up and cooling down
- To develop skill related fitness
- To learn special warming up exercises
- To improve body positioning and learn exercises related
- To improve sports performance

#### UNIT-I

##### 1. General warming-up, Specific warm-up and Cooling down exercises.

- 1.1 General warming-up exercises.
- 1.2 Warming up before a specific training session.
- 1.3 Cooling down exercises after a specific training session.
- 1.4 Organization of warming up and cooling down exercises.

#### UNIT-II

##### 2. Physical fitness test (Strength, speed, endurance, flexibility and co-ordination)

- 2.1 Strength test: pushups, wall squats
- 2.1 Speed test: 30 meter dash/ 50 meter dash.
- 2.2 Aerobic fitness: 12 minutes run test.
- 2.3 Flexibility test: Sit and reach test and Shoulder stretch test
- 2.4 Co-ordination test: Alternate Hand-Wall Toss test.

### UNIT-III

#### 3. Body positioning and exercises

- 3.1 Body positioning with and without rifle.
- 3.2 Exercises for rifle body positioning
- 3.3 Body positioning with and without pistol.
- 3.4 Exercises for pistol body positioning.

### UNIT-IV

#### 4. Sports specialization performance test.

- 4.1 Target holding capacity-1hr.
- 4.2 Dry holding capacity-1hr.
- 4.3 Bench rest shooting- grouping and accuracy.
- 4.4 Standing position with rifle/pistol-grouping and accuracy.

#### Evaluation Total Mark 100

Evaluation criteria	Internal Assessment	External Assessment
Physical Fitness test (All the fitness components)	25 Marks	25 marks
Sports Performance test	25 marks	25 marks
Total	50 Marks	50 Marks

## SEMESTER - I

### PRACTICAL: Shooting

Course Code: BSC/CCP/ 105F

Course Code	Course Name	Credit	Teaching Hours	Internal Marks	External Marks	Total Marks
BSC/CCP/ 105F	Practical: Shooting	6	192	75	75	150

#### Learning outcome

- To know and have knowledge about the shooting ranges and its components.
- To understand the development of shooting posture.
- To have the knowledge about the basic understandings of shooting.
- To be able to officiated and conduct shooting competitions for 10m rifle and pistol events.

#### UNIT-I

##### 1. Shooting range and maintenance

- 1.1 Knowledge about the specification of 10m indoor range
- 1.2 Knowledge about the specification of 25m outdoor range
- 1.3 Knowledge about the specification of 50m outdoor range
- 1.4 Maintenance of shooting range

#### UNIT-II

##### 2. Posture and development.

- 2.1 Basic human posture
- 2.2 Development of holding capacity
- 2.3 Customized individual shooting posture
- 2.4 Exercises that help to develop shooting posture

#### UNIT-III

##### 3. Basics of shooting

- 3.1 Stance of shooting.
- 3.2 Perception-eye position
- 3.3 Breathing technique of shooting.
- 3.4 Aiming and triggering of shooting.
- 3.5 Follow through of shooting.

#### UNIT-IV

##### 4. Officiating at 10m events

- 4.1 Officiating to conduct the qualification round of air rifle
- 4.2 Officiating to conduct the qualification of air pistol
- 4.3 Officiating to conduct finals of air rifle event
- 4.4 Officiating to conduct finals of air pistol event

**Submission of training record book at the time of practical examination**

**Evaluation Total Mark 150**

Evaluation criteria	Internal Assessment	External Assessment
Knowledge about Shooting ranges	20Marks	20Marks
Skill proficiency	20 marks	20 marks
Officiating Proficiency	20 Marks	20 Marks
Record book and Viva	15 Marks	15 Marks
Total	75 Marks	75 Marks

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**SEMESTER – II**

<b>Course Code</b>	<b>Course Name</b>	<b>Credit</b>	<b>Teaching Hours</b>	<b>Internal Marks</b>	<b>External Marks</b>	<b>Total Marks</b>
<b>THEORY</b>						
BSC/CC/201	Kinesiology and Biomechanics	3	48	30	45	75
BSC/CC/202	Introduction to Bio-Chemistry	2	32	20	30	50
BSC/CC/203E	Rules, Regulations and Interpretation: Shooting	3	48	30	45	75
BSC/GE/02	Communication Skill (English)	2	32	20	30	50
BSC/AECC /02	Environmental Science	2	32	20	30	50
<b>LAB PRACTICAL</b>						
BSC/CC(P)/201	Kinesiology and Biomechanics	1	32	10	15	25
BSC/CC(P)/202	Introduction to Bio-Chemistry	1	32	10	15	25
BSC/GE(P)/02	Communication Skill (English)	1	32	10	15	25
BSC/AECC(P)/02	Disaster Management	1	32	-	-	-
<b>SPORTS PRACTICAL</b>						
BSC/CCP/204F	General Conditioning and Performance – II: Shooting	4	128	50	50	100
BSC/CCP/205F	Practical: Shooting	6	192	75	75	150
<b>TOTAL</b>		<b>25</b>	<b>608</b>	<b>275</b>	<b>350</b>	<b>625</b>

NCC is compulsory for all students in first year.

NB: CC= Core Course, AECC=Ability Enhancement compulsory course,DSC= Discipline Specific Course, GE=Generic Elective, SECC= Skill Enhancement core course, CCP= Core course practical

## SEMESTER – II

### KINESIOLOGY AND BIOMECHANICS

COURSE CODE: BSC/CC/201

Course Code	Course Name	Credit	Teaching Hours	Internal Marks	External Marks	Total Marks
BSC/CC/201	Kinesiology and Biomechanics	3	48	30	45	75

#### Course LEARNING OUTCOMES

After completing this course, the students will be able to

- Understanding the concept of kinesiology and biomechanics
- Understanding the classification and fundamental movements
- Describing the concept of kinetics and kinematics
- Kinesiological and biomechanical Analysis of the locomotion of movements

#### COURSE CONTENTS

##### UNIT - I

##### Introduction to Kinesiology

- 1.1 Definition, Aims and Objectives of Kinesiology and sports Biomechanics
- 1.2 Role of Kinesiology and biomechanics in Sports.
- 1.3 Brief history with important contributions of Aristotle, Leonard Da Vinci, Weber brothers
- 1.4 Basic Concepts of Axes and Planes, Center of Gravity & Line of Gravity

##### UNIT-II

##### Joints and Movements (Upper Extremity and Lower Extremity)

- 2.1 Location and action of major muscles acting at the following joints:  
(Shoulder, Elbow, Wrist, Hip, Knee & Ankle)
- 2.2. Fundamental Movements of Human Body)
- 2.3 Two-joint muscles ( Origin , Insertion and Function)
- 2.4 All or None Law , Reciprocal Innervations,

##### UNIT-III

##### Application of Mechanical Concepts

- 3.1 Quantities in biomechanics, Scalar and vector quantities, Motion, type of motion, Distance and speed, Displacement and velocity, Acceleration, Angular distance and Angular displacement, Angular Speed, Angular Velocity, Angular Acceleration, Inertia, mass, weight, Newton's Laws of motion.
- 3.2 Work, Power & Energy, potential and kinetic energy.
- 3.3 Force and its characteristics, Internal and external forces and application of force, centripetal and centrifugal forces
- 3.4 Stability and Equilibrium ( Nature , Types and Advantages), factors affecting stability, principles of stability, Lever: Types and Implications in Sports, mechanical advantages of levers

## UNIT -IV

### **Projectile motion, Kinesiological and mechanical analysis of movements**

- 4.1 Kinesiological analysis of fundamental movements
- 4.2 Motion, its importance in sports with reference to Diving , Gymnastics, Jumping & Throwing
- 4.3 Projectile Motion : Principles, Factors affecting Projectile Motion and it's Applications in Sport
- 4.4 Mechanical Analysis of Fundamental Movements : (Walking, Running, Jumping, Throwing, Catching, Landing)



## LAB PRACTICAL

### Kinesiology and Biomechanics

Course CODE: BSC/CC (P)/201

Course Code	Course Name	Credit	Teaching Hours	Internal Marks	External Marks	Total Marks
BSC/CC/201	Kinesiology and Biomechanics	1	32	10	15	25

#### UNIT-I

- 1.1.Demonstration of fundamental movements with reference to Axis and planes
- 1.2.Calculation of Center of Gravity, Segmentation Method
- 1.3.Motion Analysis of Sports Skill (Videography)
- 1.4.Demonstration and analysis of projectile motion

#### UNIT-II

- 2.1.Mechanical analysis of fundamental movements with Kinovia soft ware
- 2.2The use of videography in recording sports movements
- 2.3 Recording the movement and Experimental procedures
- 2.4. Maintaining a practical record book

#### SUGGESTED READING

1. A.K. Lawrence Mamta MP *Kinesiology*(Friends Publication India 2004)  
Broer, M.R. *Efficiency of Human Movement* (Philadelphia : W.B. Saunders Co., 1966)
2. Bartlett Roger, An introduction to sports Biomechanics, Analysing Human Movement Pattern, Rouledge,2007.
3. Bunn, John W. *Scientific Principles of Coaching* (Engle wood cliffs : N.J. Prentice Hall Inc., 1966)  
Duvall, E.N. *Kinesiology* (Engle wood cliffs : N.J. Prentice Hall Inc., 1956)
4. Hoffman S.J. *Introduction to Kinesiology* (Human Kinesiology publication In.2005 Uppal
5. Rasch and Burke, *Kinesiology and Applied Anatomy* (Philadelphia : Lea and Fibger, 1967) Scott, M. G. *Analysis of Human Motion*, New York.
6. Wells, K. P. *Kinesiology* (Philadelphia : W.B. Saunders Co. 1966) Cooper, John M. and Glasgow, R.B. *Kinesiology* (St. Louis : C.V. Mosby Co., 1963)

**SEMESTER - II**  
**INTRODUCTION TO BIO-CHEMISTRY**  
**COURSE CODE: BSC/CC/202**

Course Code	Course Name	Credit	Teaching Hours	Internal Marks	External Marks	Total Marks
BSC/CC/202	Introduction to Bio-Chemistry	2	32	20	30	50

**COURSE LEARNING OUTCOMES**

**After completing this course, the students will be able to**

- Understand the concept of exercise & sports biochemistry
- Understand the concept of metabolism during different types of sports & exercise
- Understand the energy system Phosphagen System, Anaerobic System, Aerobic System
- Understand the various biochemical parameters used to monitor the sports training

**UNIT - I**

**INTRODUCTION TO BIOCHEMISTRY AND ENERGETICS**

- 1.1 Concept of Exercise and sports biochemistry
- 1.2 Importance of Sports and Exercise Biochemistry
- 1.3 Biochemical Concepts - Organization of matter, Chemical bonding, Chemical Reactions
- 1.4 Muscle Contractile Elements in Muscle, Process of Muscle Contraction, Energy for Muscle Contraction  
ATP the energy currency

**UNIT- II**

**BIOENERGETICS AND FUNDAMENTALS OF EXERCISE BIOCHEMISTRY**

- 2.1 Meaning and definition of Metabolism, Anabolic and Catabolic processes, Fundamentals of Bio-Energetics, Energy systems – Phosphagen System, Anaerobic System, Aerobic System
- 2.2 Brief overview on- Carbohydrate metabolism, Carbohydrates: Basics of Carbohydrate Metabolism, Regulation of glycogen metabolism,
- 2.3 Lipid metabolism: definition, classifications and general functions; Introduction to essential fatty acids, cholesterol, Blood lipids, brief review of lipoproteins.
- 2.4 Proteins: definition, classification and Biomedical Importance, Plasma Proteins and functions

## UNIT- III

### Biochemical aspects of exercise

3.1 Introduction to investigations related to Basics of routine Bio-chemical tests for Physiological functions i.e., Lipid Profile, Blood Urea, Blood Urea Nitrogen (BUN), Serum Creatinine, Serum Uric Acid with estimation of Urinal Protein and CP Kinase, Glucose.

3.2 Fundamentals of Acid base balance and its regulations during exercise.

3.3 Immune system and exercise, Classification and biochemical structure of immunoglobulins with functions

3.4 Overview of Sports anemia in athletes.

### PRACTICAL

#### Introduction to Bio-Chemistry

Course CODE: BSC/CC (P)/202

Course Code	Course Name	Credit	Teaching Hours	Internal Marks	External Marks	Total Marks
BSC/CC(P)/202	Introduction to Bio-Chemistry	1	32	10	15	25

### UNIT-I

1.1. Introduction to basic biochemical lab equipment

1.2 Laboratory safety and procedures

1.3. Microscopic study of cell

1.4 Urinal Protein and General urine analysis

### UNIT-II

2.1. Estimation of hemoglobin and Blood cells

2.2. Lipid Profile

2.3. Urea and Uric acid

2.4 Glucose

### SUGGESTED READINGS

1. American College of Sports Medicine (2010). Guidelines for Exercise Testing and Prescription (8th Edition). Lippincott Williams & Wilkins, Philadelphia.
2. McCardle, W.D., Katch, F.I. & Katch, V.L. (2007). Exercise Physiology. Energy, Nutrition and Human Performance (6th Edition). Lippincott Williams & Wilkins, Baltimore.
3. Vassilis Mougios. Exercise Biochemistry (2006). Human Kinetics.
4. Wilmore, J.H. & Costill, D.L (2008). Physiology of Sport and Exercise (4th Edition). Human Kinetics, Champaign, IL.

**SEMESTER – II**  
**RULES, REGULATIONS AND INTERPRETATION: Shooting**

**Course CODE: BSC/CC/203F**

<b>Course Code</b>	<b>Course Name</b>	<b>Credit</b>	<b>Teaching Hours</b>	<b>Internal Marks</b>	<b>External Marks</b>	<b>Total Marks</b>
BSC/CC/203F	Rules, Regulations and Interpretation: Shooting	3	48	30	45	75

### **ESSENCE OF THE COURSE**

The course will enable the students to know about the general technical, discipline and safety rules. It also focuses on shooting rules and officiating of different events, its clothing and equipments.

### **COURSE LEARNING OUTCOME**

After completing this course, the student will be able to

- Have knowledge about the range commands.
- Know about the` competition rules of different events.
- Learn about competitions procedures and finals.
- Learn about the rules of clothing and usage.
- Learn about different levels of competitions.

#### **UNIT- I**

#### **1. Range commands, targets, pellets and ammunitions**

- 1.1 Range commands and shooting terminology.
- 1.2 Target and target standards.
- 1.3 10m events target and pellets.
- 1.4 25m events target and ammunitions.
- 1.5 50m events target and ammunitions.

#### **UNIT- II**

#### **2. Rules, competition procedures and conduct of finals**

- 2.1. 10m Air Rifle and Air Pistol event rules, competition procedures.
- 2.2. 25m Pistol events rules and competition procedures.
- 2.3. 50m 3P Rifle and 50m Pistol event rules and competition procedures.
- 2.4. Mixed team events of 10m, 25m and 50m
- 2.5. Final events of 10m, 25m and 50m.

#### **UNIT- III**

#### **3. Competition clothing and equipment control rules**

- 3.1. Clothing and regulations, standards for clothing, the ISSF dress code for athlete and Coaches.
- 3.2. ISSF eligibility of athletes -Identification of athlete's equipment, accessories and footwear.
- 3.3. Sponsorships and advertising, rules for sponsor markings, ISSF commercial rights.
- 3.4. Equipments control- Equipment control procedures; Bib (Start) Numbers and items worn by athletes; blinders; Post competition testing.

## UNIT- IV

### 4. General technical rules

- 4.1 Interruptions in 10m, 50m Rifle and Pistol events.
- 4.2 Tie-Breaking: Individual ties in 10m, 25m, 50m events.
- 4.3 Protest and Appeals
- 4.4 Coaching during any event.



**SEMESTER –II**  
**COMMUNICATION SKILL (English)**  
**COURSE CODE: BSC/GE/02**

Course Code	Course Name	Credit	Teaching Hours	Internal Marks	External Marks	Total Marks
BSC/GE/02	Communication Skill (English)	2	32	20	30	50

**COURSE LEARNING OUTCOMES**

**After completing this course, the students will be able to**

- Understand Types and process of communication, Verbal and Non-verbal Communication
- Know about the Language Skill in relation to sports
- Understand the Oral Communication Skill in relation to sports

**UNIT-I**

**Communication: An Introduction**

1.1 Introduction to communication: Process of Communication; Differences between Technical and General Communication; Barriers to Communication; Measures to Overcome the Barriers to Communication.

1.2 Types of Communication: Types of Communication; Verbal Communication-Importance of verbal communication- Advantages of verbal communication- Advantages of written communication; Significance of Non-verbal Communication

1.3 Communication in Organizations: Internal Communication; Stake Holders in Internal Communication; Channels of Internal Communication; External Communication; Stake Holders in External Communication; Channels of External Communication.

1.4 Non-Verbal Communication: Personal Appearance; Gestures, Postures, Types of Body Language, Facial Expression; Eye Contacts; Time language; Silence

**UNIT-II**

**LANGUAGE SKILLS**

2.1: Listening skills: Hearing and listening; importance of listening skills, listening practice.

2.2: Speaking skills: Importance of speaking skills; Pronunciation; fluency; speaking practice.

2.3: Reading skills: sub-skills of reading; effective reading; reading practice.

2.4: Writing skills: types of writing; General Principles of Writing; Improving Writing Skills, Essentials of good style.

**UNIT - III**

**Oral Communication Skills**

3.1 Presentation Literacy: foundation; ideas; tools.

3.2 Presentation Literacy: process; on stage.

3.3 Speaking effectively: basic skills; developing confidence.

3.4 Speaking effectively: subject; audience.

### Practical

#### Communication Skill (English)

Course CODE: BSC/GE(P)/02

Course Code	Course Name	Credit	Teaching Hours	Internal Marks	External Marks	Total Marks
BSC/GE(P)/02	Communication Skill (English)	1	32	10	15	25

### UNIT-I

#### 1.1 Effective Speaking Skills.

Practical: Ice-Breaking Activity and JAM Session- Situational Dialogues – Greetings – Taking Leave – Introducing Oneself and Others.

#### 1.2 Effective Communication strategies.

Practical: Situational Dialogues – Role-Play- Expressions in Various Situations –Making Requests and Seeking Permissions - Telephone Etiquette.

### UNIT-II

#### 2.1 Descriptions- Narrations- Giving Directions and Guidelines.

Practical: Giving Instructions – Seeking Clarifications – Asking for and Giving Directions – Thanking and Responding – Agreeing and Disagreeing – Seeking and Giving Advice – Making Suggestions.

#### 2.2. Public Speaking – Exposure to Structured Talks - Non-verbal Communication- Presentation Skills.

Practical: Making a Short Speech – Extempore- Making a Presentation.

#### 2.3. Group Discussion- Interview Skills.

Practical: Group Discussion- Mock Interviews.

### SUGGESTED READINGS

1. A.S. Hornby's. *Oxford Advanced Learners Dictionary of Current English*, 7<sup>th</sup> Edition
2. Bansal, R.K. and J.B. Harrison. *Spoken English*. Orient Language.
3. G.O.E. Lydall, *A practical Guide to précis Writing & indexing*. London: Macdonald & Evans Ltd. (1955)
4. John Elisson Kahn, D. Phil., *How to write & speak better English*.
5. Prasad, P. *Communication Skills*. S.K. Kataria& Sons.
6. R.C. Sharma, Krishna Mohan. *Business Correspondence and Report Writing*.
7. Sen, Leena. *Communication Skills*. Prentice Hall of India, New Delhi.
8. Sethi, J & et al. *A Practice Course in English Pronunciation*. Prentice Hall of India, New Delhi.

**SEMESTER – II**  
**ENVIRONMENTAL SCIENCE**  
**COURSE CODE: BSC/AECC/02**

Course Code	Course Name	Credit	Teaching Hours	Internal Marks	External Marks	Total Marks
BSC/AECC/02	Environmental Science	2	32	20	30	50

**COURSE LEARNING OUTCOMES**

**After completing this course, the students will be able to**

- Understand the scope, importance, eco system and renewable and non-renewable resources
- Understand the Biodiversity, Conservation and Environmental Pollution and Management
- Understand Environmental Policies, Practices and Human Communities & Environment

**Unit-I**

**Introduction to Environmental Studies, Ecosystems & Natural Resources: Renewable and Non-renewable Resources**

- 1.1 Scope and importance of Environmental Science; Concept of sustainability and sustainable development, Environmental Sustainability in Sports.
- 1.2 Ecosystem and its structure and function; Energy flow in an ecosystem: food chains, food webs and ecological succession. Case studies of the following ecosystems: a) Forest ecosystem b) Grassland ecosystem c) Desert ecosystem d) Aquatic ecosystems (ponds, streams, lakes, rivers, oceans, estuaries)
- 1.3 Deforestation: Causes and impacts due to mining, dam building on environment, forests, biodiversity and tribal populations.
- 1.4 Water: Use and over-exploitation of surface and ground water, floods, droughts, conflicts over water (international & inter-state). And Energy resources: Renewable and non-renewable energy sources, use of alternate energy sources, growing energy needs, case studies.

**Unit-II**

**Biodiversity, Conservation and Environmental Pollution and Management**

- 2.1 Level and Values of Biodiversity; Threats to biodiversity: Habitat loss, poaching of wildlife, man-wildlife conflicts, biological invasions; Conservation of biodiversity: In-situ and Ex-situ conservation of biodiversity; Ecosystem and biodiversity services: Ecological, economic, social, ethical, aesthetic and Informational value.
- 2.2 Environmental pollution: types, causes, effects and controls; Air, water, soil and noise pollution and nuclear hazards and human health risks
- 2.3 Solid waste management: Control measures of urban and industrial waste.
- 2.4 Plastic pollution: Pollution case studies and report.

### Unit-III

#### Environmental Policies, Practices and Human Communities & Environment

- 3.1 Climate change, global warming, ozone layer depletion, acid rain and impacts on human communities and agriculture
- 3.2 Human population growth: Impacts on environment, human health and welfare.
- 3.3 Environmental movements: Chipko, Silent valley, Bishnois of Rajasthan.
- 3.4 Environmental communication and public awareness, case studies and report.

#### SUGGESTED READING

1. A.C. Pandey (2014). *Frontiers in Environmental Research, Academic Excellence*, India.
2. Agrawal, K. C. (2001). *Environmental biology*. Bikaner: Nidhi publishers Ltd.
3. Gupta (2001) *Methods in Environmental Analysis, Water, Soil and Air*, AGROBIOS (India).
4. Hofrichter, R. (ed.) *Toxic Struggle: The Theory and Practice of Environmental Justice*. Philadelphia: New Society Publishers.
5. K. Glaz, B.K. Rimer, K. Viswanath (2008). *Healthy Behavior and Healthy Education* (4<sup>th</sup> edition). Jossey-Bass A Wileyimprint.
6. K. Tones, Y.K. Robinson"s, S. Tilfor (2013). *Health Education*, Springer.
7. L.B. Lave, E.P. Seskin (2013). *Air Pollution and Human Health*, Ref. Press, New York. P.K.
8. Lancaster, R. N. and Leonardo, M. (eds.) 1997. *The Gender /Sexuality Reader: Culture, History, Political Economy*. New York: Routledge. 10
9. P. Elliot, J.C. Wakefield, N.G. Best, D.J. Biggs (2000). *Spatial Epidemiology: Methods and Application*.
10. Park J.E. & Park K. (2002). *Textbook of preventive and social medicine*. Jabalpur: Banarasi Das Bhanot Publication.
11. Shiva, V. 1989. *Staying Alive: Women, Ecology and Development*. London: Zed Books.
12. Stein, R. 2004. *New Perspective on Environmental Justice: Gender, Sexuality and Activism*. New Jersey: Rutgers University Press.
13. UGC (2005). *Textbook of Environmental Studies*, University Press.
14. UNDP: Human Development Report (2000) New Delhi: OUP.
15. W.P. Cummingham, B.W. Saigo (2001). *A Global Concern*, Cummingham.
16. WHO (2006). *Preventing diseases through healthy environment*.

**Semester – II**  
**Practical**  
**Disaster Management**  
**Course Code: BSC/AECC(P)/02**

Course Code	Course Name	Credit	Teaching Hours	Internal Marks	External Marks	Total Marks
BSC/AECC(P)/02	Disaster Management	0	0	0	0	0

**Unit – I**

**Natural disaster**

- 1.1.Land disaster
- 1.2.Water disaster
- 1.3.Mountain disaster
- 1.4.Sea disaster

**Men Made Disaster**

- 2.1. Chemical disaster
- 2.2. Mechanical and Technical disaster
- 2.3. Structural disaster
- 2.4. Nuclear disaster



## SEMESTER – II

### GENERAL CONDITIONING AND PERFORMANCE – II: Shooting

#### COURSE CODE: BSC/CCP/204F

Course Code	Course Name	Credit	Teaching Hours	Internal Marks	External Marks	Total Marks
BSC/CCP/204F	General Conditioning and Performance – II: Shooting	4	128	50	50	100

#### Learning outcome

- To know different strength test exercises
- To improve sports performance
- To learn special warm-up exercises for shooting sports
- To learn about Organizing conditioning class

#### Unit -I

#### 1. Different strength test in shooting.

- 1.1 Strength- one mint plank test
- 1.2 Dips test (Upper body strength and strength endurance)
- 1.3 Abdominal strength test
- 1.4 Back strength upper and lower (Kraus Webber)

#### UNIT-II

#### 2. Shooting performance.

- 2.1 Maximum Chains of 10's
- 2.2 Tight grouping
- 2.3 Maximum score in one series
- 2.4 Total relative performance

#### UNIT-III

#### 3. Specific warm-up exercises according to the skill/task.

- 3.1 Specific warm-up exercises for positioning
- 3.2 Specific warm-up exercises for lifting
- 3.3 Specific warming-up exercises for Trigger finger and grip strength
- 3.4 Specific warming-up exercises for holding

## UNIT-IV

### 4. Organizing the conditioning classes.

- 4.1 Specific warm-up for particular muscle groups
- 4.2 Joints movement's direction and demands of the exercise.
- 4.3 Conditioning Class organization, formation and control (set, rep, intensity and volume)
- 4.4 Development of basic motor qualities.

### Evaluation Total Mark 100

Evaluation criteria	Internal Assessment	External Assessment
Physical Fitness test (All the fitness components)	15 Marks	15 Marks
Sports Performance test	15 Marks	15 Marks
Specific Warming up exercises class proficiency	10 Marks	10 Marks
Conditioning class proficiency	10 Marks	10 Marks
Total	50 Marks	50 Marks



## Semester – II

### PRACTICAL: Shooting

Course Code: BSC/CCP/205F

Course Code	Course Name	Credit	Teaching Hours	Internal Marks	External Marks	Total Marks
BSC/CCP/205F	Practical: Shooting	6	192	75	75	150

#### Learning outcome

- To develop shooting skills
- To be able to analyze faults and make correction
- To able to make training plans
- To be able to officiate

#### UNIT-I

##### 1. Skills development

- 1.1 Extended holding with Rifle/Pistol
- 1.2 Smooth triggering
- 1.3 Proper follow through
- 1.4 Shot execution in time

#### UNIT-II

##### 2. Fault analysis and correction

- 2.1 Faults in body position and correction
- 2.2 Faults in aiming and correction
- 2.3 Faults in triggering and correction
- 2.4 Faults in follow through and correction

#### UNIT-III

##### 3. Training plan and execution.

- 3.1 Daily goals
- 3.2 Weekly goals
- 3.3 Monthly goals
- 3.4 Yearly goals
- 3.5 Performance review

#### Unit-IV

##### 4. Officiating at 25m pistol event and 50m prone event.

- 4.1 Officiating to conduct the qualification for 25m pistol event.
- 4.2 Officiating to conduct finals for 25m pistol event.
- 4.3 Officiating to conduct the qualification for 50m prone event.
- 4.4 Officiating to conduct the finals for 50m prone event.

**Submission of training record book at the time of practical examination**

### Evaluation Total Mark 150

Evaluation criteria	Internal Assessment	External Assessment
Skill proficiency	20Marks	20Marks
Fault analysis, correction and training plan	20 marks	20 marks
Officiating Proficiency	20 Marks	20 Marks
Record book and Viva	15 Marks	15 Marks
Total	75 Marks	75 Marks

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**SEMESTER– III**

<b>Course Code</b>	<b>Course Name</b>	<b>Credit</b>	<b>Teaching Hours</b>	<b>Internal Marks</b>	<b>External Marks</b>	<b>Total Marks</b>
<b>THEORY</b>						
BSC/CC/301	Fundamentals of Psychology and Sociology	2	32	20	30	50
BSC/CC/302	Applied Exercise and Sports Physiology	2	32	20	30	50
BSC/CC/303F	Technique and Technical Development: Shooting	3	48	30	45	75
BSC/SECC/01	Science of Sports Training and Conditioning	3	48	30	45	75
BSC/GE/03	Traditional Sports and Games	2	32	20	30	50
<b>LAB PRACTICAL</b>						
BSC/CC(P)/301	Fundamental of Psychology and Sociology	1	32	10	15	25
BSC/CC(P)/302	Applied Exercise and Sports Physiology	1	32	10	15	25
BSC/GE(P)/03	Traditional Sports and Games	1	32	10	15	25
<b>SPORTS PRACTICAL</b>						
BSC/CCP/304F	General Conditioning and Performance – III: Shooting	4	128	50	50	100
BSC/CCP/305F	Practical: Shooting	6	192	75	75	150
<b>TOTAL</b>		<b>25</b>	<b>608</b>	<b>275</b>	<b>350</b>	<b>625</b>

**NSS is compulsory for all students in second year.**

NB: CC= Core Course, AECC=Ability Enhancement compulsory course,DSC= Discipline Specific Course, GE=Generic Elective, SECC= Skill Enhancement core course, CCP= Core course practical,

**SEMESTER– III**  
**FUNDAMENTALS OF PSYCHOLOGY AND SOCIOLOGY**  
**COURSE CODE – BSC/CC/301**

Course Code	Course Name	Credit	Teaching Hours	Internal Marks	External Marks	Total Marks
<b>THEORY</b>						
BSC/CC/301	Fundamentals of Psychology and Sociology	2	32	20	30	50

**COURSE LEARNING OUTCOMES**

**After completing this course, the students will be able to:**

- Understand the Basic Concepts of Sports Psychology
- Understand how sports environment and group process influence performance
- Understand the sociological issues for optimizing behavior and performance

**UNIT-I**

**Basic Concepts of Psychology of Sports**

- 1.1 Introduction to Sports Psychology: Definition, History and understanding present and future trends.
- 1.2 Personality and Sports: Defining personality and understanding personality structure
- 1.3 Motivation and Emotions: Definition, developing achievement motivation and positive emotions.
- 1.4 Arousal, Stress and Anxiety: Definition, identifying sources of stress and anxiety, connecting arousal and anxiety to performance.

**UNIT-II**

**Sports Environment and Group Process**

- 2.1 Sports Environment and Group Process, Competition and Cooperation: Definition, viewing competition as a process, enhancing cooperation
- 2.2. Group and Team Dynamics: Differences between groups and teams, group development, creating effective team climate.
- 2.3 Group Cohesion: Definition, relationship between cohesion and performance, enhancing cohesion.
- 2.4 Leadership and Communication: Definition, effective leadership, understanding communication process.

**UNIT-III**

**Sports and Society:**

- 3.1 Development of sociability through Sports and development of sociability to enhancement sports performance
- 3.2 Creation of social acceptance of Sports in Society, Development of athlete's identity as the role model in the society
- 3.3 Role of Family, Institution, and peer group/fan club in developing sports culture, ethical values and code of conduct for players, coaches and spectators
- 3.4 Gender equity in sports, sports and violence (players and spectators)

**PRACTICAL**  
**FUNDAMENTALS OF PSYCHOLOGY AND SOCIOLOGY**

**Course CODE: BSC/CC(P)/301**

Course Code	Course Name	Credit	Teaching Hours	Internal Marks	External Marks	Total Marks
<b>LABPRACTICAL</b>						
BSC/CC(P)/301	Fundamental of Psychology and Sociology	1	32	10	15	25

**UNIT-I**

- 1.1. Reaction time and Bio Feedback technique: Profile assessment of an athlete.
- 1.2. Color Progressive Matrices
- 1.3 Depth perception, Finger dexterity, Concentration, Anticipation test: demonstration and performing on an athlete.
- 1.4. Memory test, Achievement motivation test, Sheldon's Personality Test, Big Five Personality test: interpretation in relation to Sports.

**UNIT-II**

- 2.1. Assessment of Leadership quality and cohesiveness
- 2.2. Sociometry
- 2.3. Social Facilitation: Assessment of Audience effect in Sports.
- 2.4. The student will take Psycho-Social Project in their respective Sports/Games

**SUGGESTED READING**

1. Ball, D. W. & Loy, J. W. (1975). Sport and social order; Contribution to the sociology of sport. London: Addison Wesley Publishing Co., Inc.
2. Blair, J. & Simpson, R. (1962). Educational psychology, New York: McMillan Co. Cratty, B. J. (1968). Psychology and physical activity. Eaglewood Cliffs. Prentice Hall.
3. Kamlesh, M. L. (1998). Psychology in physical education and sport. New Delhi: Metropolitan Book Co.
4. Loy, J. W., Kenyon, G. S. & McPherson, B. D. (1978). Sports and social system. London: Addison Wesley Publishing Company Inc.
5. Loy, J. W., Kenyon, G. S. & McPherson, B. D. (1981). Sports culture and society. Philadelphia: Lea & Febiger.
6. Mathur, S.S., (1962). Educational psychology. Agra. Vinod Pustak Mandir. Skinner, C. E., (1984). Education psychology. New Delhi: Prentice Hall of India.
7. William, F. O. & Meyer, F. N. (1979). A handbook of sociology. New Delhi: Eurasia Publishing House Pvt Ltd.
8. Ball, Donald, W. and Lay John W. Sport and Social order Contribution to the Sociology of Sport.
9. Lea & Febiger, (1981).
10. Loy John W., Mepheron, Barry D., and Kenyon Gerall, Sport and Social System (London: Addition Wesley Publishing Co. Inc., 1978).
11. Loy, Jhon W., Kenyon, Geral S. and Mopherson, Barry D., Sports Culture and society (Philadelphia: London: Addition Wesley Publishing Co. Inc., 1975).

**SEMESTER – III**  
**APPLIED EXERCISE AND SPORT PHYSIOLOGY**  
**COURSE CODE: BSC/CC/302**

Course Code	Course Name	Credit	Teaching Hours	Internal Marks	External Marks	Total Marks
<b>THEORY</b>						
BSC/CC/302	Applied Exercise and Sports Physiology	2	32	20	30	50

**LEARNING OUTCOMES**

**After completing this course, the students will be able to:**

- Understand about the exercise physiology and its role in sports.
- Understand the muscles adaptation with various training load.
- Understand the effect of exercise on circulatory and respiratory system.
- Understand hot and humid temperature and sports performance, High altitude training and sports performance.

**COURSE CONTENTS**

**UNIT-I**

**Exercise and Bioenergetics**

- 1.1 Meaning, Definition and its application of exercise and sports physiology in health fitness and sports performance
- 1.2 Bioenergetics and exercise metabolism; Measurement of energy expenditure in various activity
- 1.3 Aerobic and Anaerobic metabolism during exercise and training
- 1.4 Physiological basis of training related to specific sports, Assessment of aerobic and anaerobic capacity and its interpretation of data (Project based learning).

**UNIT-II**

**Muscular System**

- 2.1 Theories of muscular contraction and sliding filament theory, Neural control of muscular activity
- 2.2 Effect of exercise and training on muscular system
- 2.3 Physiology of Fatigue, Over training and Recovery
- 2.4 Development and determination of muscle strength, Assessment of muscular strength, collection and interpretation of data.

**UNIT-III**

**Conditioning and Training on circulatory and respiratory Systems**

- 3.1 Cardiac Cycle, Stroke Volume, Cardiac Output, factors affecting heart rate and Cardiac Hypertrophy.
- 3.2 Effect of Exercises and training on the Cardio vascular system.
- 3.3 Mechanism of Breathing, Respiratory muscles, Minute ventilation, Diffusion of gases, Oxygen Debt, Lung Volumes and Capacities, Second Wind.
- 3.4 Effects of exercises and training on respiratory system.

## UNIT-IV

### **Exercise and Sport Physiology and Performance**

4.1 Immune system and sports performance

4.2 Growth and development, maturity of sports person, Genetic and sports performance

4.3 Exercise and Neuro endocrine system

4.4 Hormonal response and adaptation to exercise



## PRACTICAL

### Applied Exercise and Sports Physiology

COURSECODE: BSC/CC(P)/302

Course Code	Course Name	Credit	Teaching Hours	Internal Marks	External Marks	Total Marks
BSCCC(P)/302	Applied Exercise and Sports Physiology	1	32	10	15	25

#### UNIT-I

- 1.1 Recording of Resting, Exercise and Recovery Heart rate and Blood pressure, its interpretation and designing specific training protocol  
Video presentation and analysis of Physiological system, its interpretation and designing specific training protocol
- 1.2 Anthropometric measurement and Body Composition assessment, its interpretation and designing specific training protocol,
- 1.3 Measurements of Lungfunction, its interpretation and designing specific training protocol
- 1.4 Assessment of Cardiovascular System by Harvard Step Test, Cooper's Test, Beep Test and PWC 170.

#### UNIT-II

- 2.1 Recording of Resting, Exercise and Recovery Heart rate and Blood pressure, its interpretation and designing specific training protocol
- 2.2 Aerobic and Anaerobic Capacity measurement, its interpretation and designing specific training protocol
- 2.3 Measurement and analysis of lactic acid and heart rate in field, temperature (Dry, wet, and globe temperature) and its interpretation designing specific training protocol as a projectwork
- 2.4 Hypoxic training in Hypoxic chamber/Altitude

#### REFERENCE

1. Astrand, P.O. and Rodahi.K. Text Book of Work physiology.Tokye: Mc. Graw – Hill Kogakusha, Ltd. 1970).
2. Bourne, Geoffey H. The Structure and Function of Muscles: (London: Academic Press, 1973).
3. Guyton, Arthur C. Test Book of Medical Physiology (Philadelphia: W.B. Saunder company, 1978).
4. Karporich, P.V. and Sining. Wayne E. Physiology and Muscular Activity (Philadelphia: W.B. Saunder company, 1971), 7thEdn.
6. Mathew, D.K. and Fox. E.L., Physiological Basis of Physical Education and Athletics. (Philadelphia: W.B. Saunder company, 1976).
8. Morehouse, L.E and Miller, A.T. Physiology of Exercise (saint Louis: The C.V. Mosby Co. 1976). 7thEdn.

## SEMESTER – III

### TECHNIQUES AND TECHNICAL DEVELOPMENT: Shooting

COURSE CODE: BSC/CC/303F

Course Code	Course Name	Credit	Teaching Hours	Internal Marks	External Marks	Total Marks
BSC/CC/303F	Techniques And Technical Development: Shooting	3	48	30	45	75

#### ESSENCE OF THE COURSE

This course will enable the students to know more about the essential in shooting and its fundamentals; it will also enable the students to know more about techniques and technical aspects of shooting.

#### *COURSE LEARNING OUTCOME*

After completing this course, the students will be able to:

- Learn and develop techniques of Shooting.
- Learn about the fundamentals of Rifle and Pistol Shooting.
- Learn and develop technical knowledge in Shooting.

#### UNIT- I

##### Basic standards in Shooting

- 1.1 Introduction to techniques of shooting: Breathing, aiming, triggering and follow through.
- 1.2 Demands of Shooting: Comfortable, effective, stability and natural alignment.
- 1.3 Body posture: Muscle tension, balance, stability and sustainability.
- 1.4 Technical factors: Hold, target approach, aiming approach and trigger control.

#### UNIT- II

##### The fundamentals of Rifle shooting positions and its techniques

- 2.1. Fundamentals of Standing: Body position, head, grip, placement of rifle, left arm, elbow position, hip position, leg position, feet position and understanding of center of gravity.
- 2.2. Fundamentals of Kneeling: Body position, load bearing, left foot, arrangement of the right foot, sitting position, points of contact and alignment, jacket, trouser, sling usage, roll play.
- 2.3. Fundamentals of Prone: Head position, body position, arms, sling and breathing, jacket and trouser, points of contact and alignment.
- 2.4. Techniques: Aiming, breathing, triggering and follow through.

## UNIT- III

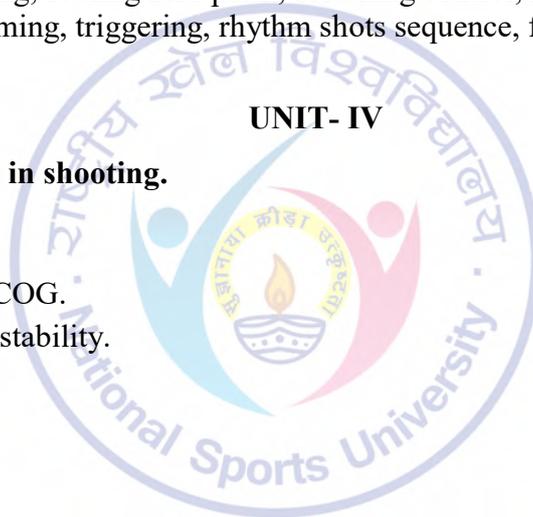
### **The fundamentals of Pistol shooting positions and its techniques**

- 3.1.Fundamentals and techniques of Pistol Shooting (10m Air Pistol and 50m Free Pistol): Stance, grip, lifting, aiming, breathing and triggering: Squeezing the trigger, coordination between triggering & aiming, coordination between triggering & sighting, finding final shooting area, follow through.
- 3.2.Fundamentals and techniques of Pistol Shooting (25m Sports Pistol and 25m Center Fire): Stance, grip, lifting and lowering, settling zero point, breathing control, holding and aiming area, correct aiming, triggering, follow through.
- 3.3.Fundamentals and techniques of Pistol Shooting (25m Rapid-Fire Pistol): Stance, grip, lifting and lowering, settling zero point, breathing control, holding and aiming area, correct aiming, triggering, rhythm shots sequence(Shifting), follow through.
- 3.4.Fundamentals and techniques of Pistol Shooting (25m Standard Pistol): Stance, grip, lifting and lowering, settling zero point, breathing control, holding and aiming area, correct aiming, triggering, rhythm shots sequence, follow through.

## UNIT- IV

### **Understanding important roles in shooting.**

- 4.1 Role of vision.
- 4.2 Role of Breathing.
- 4.3 Role of posture and COG.
- 4.4 Role of Balance and stability.



## SEMESTER –III

### SCIENCE OF SPORTS TRAINING AND CONDITIONING

COURSE CODE: BSC/SECC/01

Course Code	Course Name	Credit	Teaching Hours	Internal Marks	External Marks	Total Marks
BSC/SECC/01	Science of Sports Training and Conditioning	3	48	30	45	75

### COURSE LEARNING OUTCOME

After completing this course, the students will able to

- Understand the concept, means and methods of Sport Training and Conditioning.
- Equip to formulate and design training as per the pre-requisites of training components.
- Understand the technique and tactical preparation in particular Sports/Games.
- Understand the concept of planning and periodization of pre-requisites of competition demands.

### UNIT – I

#### Introduction & Training means and methods

- 1.1. Definition, Aim and Principles of Sports Training
- 1.2. Characteristics of Sports Training, volume, intensity, density and frequency
- 1.3. Definition, importance, Types of Overload.
- 1.4. Principles of overload, causes& characteristics of fatigue, Tackling overload

### UNIT - II

#### Training Component

- 2.1 Strength: Types, means and methods of developing strength, scientific basis of designing strength training
- 2.2 Speed - Forms of speed, means and methods of developing speed, scientific basis of designing speed training
- 2.3 Endurance and its types, means and methods of endurance training, scientific basis of designing endurance training
- 2.4 Coordination and Flexibility and its types, means and methods of development coordination and flexibility, scientific basis of designing co-ordination and flexibility training

## UNIT – III

### Technique, Tactics, Strategies

- 3.1 Meaning of Technique, Tactics, and Strategies, Difference between Technique, tactics, and strategies
- 3.2 Technique and phase of technical training related to specific sport and games
- 3.3 Tactical training and strategies planning related to specific sport and games
- 3.4 Application of technique, tactics, and strategies related to specific sport and games

## UNIT – IV

### Planning & Periodization

- 4.1 Definition, Importance and Types of Planning
- 4.2 Principles of Planning and Steps in Formulation of Plan, scientific basis of designing planning related specific sport and games
- 4.3 Concept and types of Periodization
- 4.4 Top form and scientific basis of designing Periodization related to specific sport and games

### SUGGESTED READING

1. Bompa O. Tudor and Halff G. Gregory. (2009) “Periodization Theory and Methodology of Training” Human kinetics.
2. Bompa O. Tudor, (2021) Periodization of Strength Training for Sports, Human Kinetics.
3. Bill Sweetenham and John Atkinson, (2003) Championship Swim Training, Human Kinetics.
4. Bill Ramseyer, (2011) Winning football, Human Kinetics.
5. David Joyce and Daniel Lewindon (2021) High-Performance Training for Sports, Human Kinetics.
6. Giam, C. K & The, K.C. ( 1994). Sport medicine exercise and fitness. Singapore: P.G.
7. Kurz Thomas and Mikolaj Zagorski (2001), Science of Sports Training, Stadion Publishing Co.,
8. Lorin A. Cartwright and William A. Pitney, (2021) Fundamentals of Athletes Training, Human Kinetics; Third edition.
9. Matvyew, L. P. (1981). Fundamental of sports training. Moscow: Progress Publishers
10. National Academy of Sports Medicine, (2014) NASM Essentials of Sports Performance Training, Jones and Bartlett Learning.
11. Singh, H. (1984). Sports training, general theory and methods. Patiala: NSNIS.
12. Uppal, A. K., (1999). Sports Training. New Delhi: Friends Publication.
13. Visual coaching pro software

## SEMESTER –III

### TRADITIONAL SPORTS AND GAMES

Course CODE: BSC/GE/03

Course Code	Course Name	Credit	Teaching Hours	Internal Marks	External Marks	Total Marks
BSC/GE/03	Traditional Sports and Games	2	32	20	30	50

#### Course learning outcomes:

After completing this course, the students will able to

- Know different kind of traditional sports and games
- Understand Historical development of traditional sports and games in India
- Understand importance of traditional sports and games
- Understand the social value of traditional sports and games

#### Unit-I

##### Introduction to Traditional Sports and Games

- 1.1 Need, Scope and benefits of Traditional Sports and Games in present days
- 1.2 Importance of Indian (Bharatiya) Tradition: Indian dance, music, exercise and Bharatiyama initiative
- 1.3 UNESCO: Intangible Cultural Heritage-Traditional Sports and Games (TSG)
- 1.4 International Council of Traditional Sports and Games: cultural values and activities for preservation and protection

#### Unit-II

##### Historical Development of Sports and Games

- 2.1. History of Traditional exercises, Sports and Games in ancient India and their origin.
- 2.2. Traditional exercise, Sports and Games in North East India.
- 2.3. Traditional Sports and Games in Central and South India.
- 2.4. Traditional Sports and Games in North and West India

#### Unit-III

##### Traditional Sports and Modern Olympics Sports

- 3.1. Traditional Sports and Games and its social and cultural values; Khelo India and Fit India initiative
- 3.2. Traditional Sports and Games as a tool for intercultural learning and physical literacy
- 3.3. Traditional Games as a recreational activity in active living and wellness
- 3.4. Impact of Traditional sports and games in skill enhancement of modern Olympic sports

**PRACTICAL**  
**Traditional Sports and Games**  
**Course CODE: BSC/GE(P)/03**

Course Code	Course Name	Credit	Teaching Hours	Internal Marks	External Marks	Total Marks
BSC/GE/(P)/03	Traditional Sports and Games	2	32	20	30	50

**UNIT-I**

**Critical analysis of transfer of motor qualities and skill acquisition**

- 1.1.Traditional exercises and sports of North East India, related to specific sports
- 1.2.Traditional exercises and sports of Central and South India, related to specific sports
- 1.3.Traditional exercises and sports of North and West India, related to specific sports
- 1.4.Traditional exercises and Sports from different parts of the World

**UNIT-II**

**Physical fitness and sports skill acquisition through traditional sports**

- 2.1. Traditional wrestling in India
- 2.2.Thang-Ta, Mukna and Kang.
- 2.3.Mallakhambh and Gatka
- 2.4. Kalaripayattu and Circle Kho-Kho, Raibansa

**SUGGESTED READING:**

1. [www.unesco.org](http://www.unesco.org) : Traditional Games and Sports (TSG)
2. [www.tafisa.org](http://www.tafisa.org)
3. [Encyclopaedia of Traditional Games](#), Gremese International; 192nd ed. edition (1 March 1995)
4. [Traditional Games, Sports Publication \(1 December 2015\)](#)
5. [www.mallakhambindia.com](http://www.mallakhambindia.com)
6. Rath. ShyamSundar, Martial Arts A critical Analysis of Orissa, Kalpaz Publisher, New Delhi, 2005.
7. L. Kokngang, Thang- Ta, 2008
8. KonjengbamBiren Singh, Meitei HuyenLanlong, Manipur State Kala Academy, 1985.
9. [sgfibharat.com/images/stories/RULES/Rules\\_Thangta.pdf](http://sgfibharat.com/images/stories/RULES/Rules_Thangta.pdf)
10. <https://www.keralatourism.org/kalaripayattu/origin>
11. <https://gatkaa.com>
12. <https://themanipurpage.tripod.com/culture/thangta.html>
13. [blog.globalindianschool.org](http://blog.globalindianschool.org)
14. [www.sportanddev.org](http://www.sportanddev.org)
15. [www.chaseyoursport.com](http://www.chaseyoursport.com)

## SEMESTER – III

### GENERAL CONDITIONING AND PERFORMANCE – III: Shooting

COURSE CODE: BSC/CCP/ 304F

Course Code	Course Name	Credit	Teaching Hours	Internal Marks	External Marks	Total Marks
BSC/CCP/304F	General Conditioning and Performance – III: Shooting	4	128	50	50	100

#### Learning outcome

- To develop endurance in shooting
- To enhance performance in shooting
- To learn specific warming up and strength training
- To enable students to organize conditioning classes

#### UNIT-I

#### Endurance development

- 1.1 Endurance training continuous method
- 1.2 Endurance training interval method
- 1.3 Endurance training combination of both methods
- 1.4 Organization of endurance training classes

#### UNIT-II

#### Sports performance test

- 2.1 Preparation for competition match
- 2.2 Sighting practice
- 2.3 Shot record (40 shot)
- 2.4 Match analysis

#### UNIT-III

#### . Specific warming up and Strength training

- 3.1 Specific warming up exercises
- 3.2 Free hand weight training exercises
- 3.3 Weight training exercises with dumbbells and bar with plates
- 3.4 Simple Circuit training exercises, organization of weight training classes

## UNIT-IV

### Conditioning class

- 4.1 Conditioning class for Circuit training workouts.
- 4.2 Conditioning class for Strength workouts.
- 4.3 Conditioning class for Balance training.
- 4.4 Conditioning class to increase Reacting ability.

### Evaluation Total Mark 100

Evaluation criteria	Internal Assessment	External Assessment
Physical Fitness test (All the fitness components)	15 Marks	15 Marks
Sports Performance test	15 Marks	15 Marks
Specific warm up Class Proficiency	10 Marks	10 Marks
Conditioning class and test administration proficiency	10 Marks	10 Marks
Total	50 Marks	50 Marks



**Semester – III**

**PRACTICAL: Shooting**

**COURSE CODE: BSC/CCP/ 305F**

Course Code	Course Name	Credit	Teaching Hours	Internal Marks	External Marks	Total Marks
BSC/CCP/305F	Practical: Shooting	6	192	75	75	150

**UNIT-I**

**Techniques of different events**

- 1.1. 10m rifle event skills
- 1.2. 10m pistol event skills
- 1.3. 25m pistol events skills
- 1.4. 50m rifle events skills
- 1.5. 50m pistol event skills

**UNIT-II**

**Shot development**

- 2.1 One shot sequence development
- 2.2 Smooth delivery in shot execution
- 2.3 Shot repeatability
- 2.4 Execution time consistency

**UNIT-III**

**Practical knowledge of officiating in Shooting.**

- 3.1 Competition Jury duties and functions
- 3.2 Chief Range officer (CRO) Duties and functions
- 3.3 Range Officer (RO) Duties and functions
- 3.4 Chief RTS officers (CRTSO) Duties and functions
- 3.5 RTS officers (RTSO) Duties and functions

**UNIT-IV**

**Officiating 25m/50m events.**

- 4.1 Officiating to conduct the qualification for 25m center fire
- 4.2 Officiating to conduct the qualification for 25m standard pistol event
- 4.3 Officiating to conduct the qualification for 50m 3P position rifle
- 4.4 Officiating to conduct the qualification for 50m pistol event
- 4.5 Officiating to conduct finals

**N. B. Submission of training record book at the time of practical examination**

**Evaluation Total Mark 150**

Evaluation criteria	Internal Assessment	External Assessment
Skill proficiency	20Marks	20Marks
Knowledge of officiating (duties and functions)	20 marks	20 marks
Officiating Proficiency	20 Marks	20 Marks
Record book and Viva	15 Marks	15 Marks
Total	75 Marks	75 Marks

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**SEMESTER –IV**

<b>Course Code</b>	<b>Course Name</b>	<b>Credit</b>	<b>Teaching Hours</b>	<b>Internal Marks</b>	<b>External Marks</b>	<b>Total Marks</b>
<b>THEORY</b>						
BSC/CC/401	Applied Sports Psychology	2	32	20	30	50
BSC/CC/402	Sports Medicine	3	48	30	45	75
BSC/CC/403F	Tactics , Strategies , and Tactical Development: Shooting	3	48	30	45	75
BSC/SECC/02	Kinanthropometry and Talent development in Sports	2	32	20	30	50
BSC/GE/04	Adapted Sports Education	2	32	20	30	50
<b>LAB PRACTICAL</b>						
BSC/CC(P)/401	Applied Sport Psychology	1	32	10	15	25
BSC/CC(P)/402	Sports Medicine	1	32	10	15	25
BSC/GE(P)/04	Adapted Sports Education	1	32	10	15	25
<b>SPORTS PRACTICAL</b>						
BSC/CCP/404F	General Conditioning and Performance – IV: Shooting	4	128	50	50	100
BSC/CCP/405F	Practical: Shooting	6	192	75	75	150
<b>TOTAL</b>		<b>25</b>	<b>608</b>	<b>275</b>	<b>350</b>	<b>625</b>

**NSS is compulsory for all students in second year.**

NB: CC= Core Course, AECC=Ability Enhancement compulsory course,DSC= Discipline Specific Course, GE=Generic Elective, SECC= Skill Enhancement core course, CCP= Core course practical

## SEMESTER –IV

### APPLIED SPORTS PSYCHOLOGY

COURSE CODE: BSC/CC/401

Course Code	Course Name	Credit	Teaching Hours	Internal Marks	External Marks	Total Marks
BSC/CC/401	Applied Sports Psychology	2	32	20	30	50

#### LEARNING OBJECTIVE:

After completing this course, the students will be able to

- Understand how to enhance psychological skills in sport and physical activity.
- Know how to develop mental skills in sports
- How to use sports and physical activity to enhance well-being of athletes

#### UNIT-I

##### Enhancing Psychological Skills

- 1.1. Introduction to mental training: Psychological factors and performance excellence, developing mental skills.
- 1.2. Goal Setting: Effective goals, developing athlete's goal setting skills
- 1.3. Imagery and Self-Talk: Using imagery effectively, developing imagery training program, developing athletes' smart-talk skills.
- 1.4. Concept of Biofeedback, uses and importance in Sports.

#### UNIT-II

##### Developing Mental Skills

- 2.1 Motivation: Needs and intrinsic motivation, creating mastery-oriented motivational atmosphere.
- 2.2 Attention and Self-Confidence: Attentional capacity, selective attention, implementing attentional skills program.
- 2.3 Stress Management: Understanding stress, stress management techniques, developing athletes' stress management skills.
- 2.4 Energy Management: understanding energy management, determining optimal energy zone, developing athletes' energy management skills.

#### UNIT-III

##### Enhancing Health and Well-Being

- 3.1 Physical activity and well-being: Exercise adherence, social-cognitive perspectives of perceived and sustained efforts.
- 3.2 Burnout in Sports: Burnout dropout, overtraining and staleness, monitoring burnout in athletes
- 3.3 Physical activity and quality of life: Meaning of Quality of life, Effect of physical activity and sports on quality of life.
- 3.4 Injury and Psychology: Stress and injury, role of sports psychology in injury rehabilitation.

## PRACTICAL

### Applied Sports Psychology

Course Code: BSC/CC(P)/401

Course Code	Course Name	Credit	Teaching Hours	Internal Marks	External Marks	Total Marks
BSC/CC(P)/401	Applied Sports Psychology	1	32	10	15	25

#### UNIT-I

- 1.1 Assessment and development of Motivation and integration of motivation training in relation to specific sports coaching
- 1.2 Goal Setting: integration of goal setting training in relation to specific sports coaching
- 1.3 Stress Management, Relaxation Procedures, Biofeedback Training in relation to specific sports
- 1.4 Developing Schedule of Psychological Skill Training (PST) Programme in relation to specific sports

#### UNIT-II

- 2.1 Relaxation Procedures – Progressive Relaxation – Autogenic Training, Transcendental Meditation.
- 2.2 Activation Techniques (Imagery, VMBR, HYPNOTHERAPY)
- 2.3 Cognitive Strategies: Imagery, Thought Stopping and Centering,
- 2.4 Development of verbal and non-verbal communications skill between athlete and coach

#### SUGGESTED READING

1. Andersen, M. B. (Ed.). (2005). Sports psychology in practice. Human Kinetics.
2. Anshel, M.H.(2002). Sport Psychology: From Theory to Practice. Scottsdale, AZ: Gorsuch Scarbrick.
3. Blumenstein, B., Bar-Eli, M., & Tenenbaum, G. (Eds.) (2002). Brain and body in sport and exercise: Biofeedback applications in performance enhancement. Wiley Publishing, Inc.
4. Burton, Damon, Thomas D. Raedeke (2008) Sport Psychology for Coaches Human Kinetics Publishers, Champaign Illinois.
5. Burton, D., & Raedeke, T. (2008). Introduction to mental skills training. Sport psychology for coaches. Human Kinetics.
6. Cox, Richard H (2006) Sport Psychology Concept and Application, 3rd ed Wm.C. Brown Publishers.
7. Horn, Thelma (2008) Advances in Sport Psychology Human Kinetics Publishers, Inc Champaign IL.
8. Kamlesh, M.L. (2001) Psychology in Physical Education and Sport, 3rd ed. Metropolitan Book Co.Pvt.Ltd Delhi.
9. Tenenbaum, Gershon (2001) The Practice of Sport Psychology Fitness Information Technology, INC, US
10. Weinberg, R. S., & Gould, D. (2015). Foundations of Sport and Exercise Psychology (6th ed.). Human Kinetics.
11. Weinberg, R.S & Gould, Daniel (2012) Foundations of Sport and Exercise Psychology Human Kinetics Publishers, Inc Champaign IL.
12. Williams, J.M., & Krane, V. (2014). Applied Sport Psychology: From Personal Growth to Peak Performance (7th ed.). McGraw-Hill.

**SEMESTER –IV**  
**SPORTS MEDICINE**  
**COURSE CODE BSC/CC/402**

Course Code	Course Name	Credit	Teaching Hours	Internal Marks	External Marks	Total Marks
BSC/CC/402	Sports Medicine	3	48	30	45	75

**COURSE LEARNING OUTCOME**

After completing this course, the students will able to

- Understand history, scope and importance of sports medicine.
- Understand sports injuries related to skin, muscles, tendons, ligaments, cartilage and bones.
- Understand tissue respond to stress and different types of wound healing.
- Understand ill effect of different drugs and doping.

**COURSE CONTENTS**

**UNIT - I**

**Introduction to Sports Medicine**

- 1.1 History of Sports Medicine in India and Abroad
- 1.2 Definition, aims and objectives of Sports Medicine
- 1.3 Scope, Need and Importance of Sports Medicine in sports
- 1.4 Classification of sports Injuries, differences between acute and chronic injuries.

**UNIT - II**

**Injuries in Sports**

- 2.1 Skin and Muscles Injuries (blisters, corns, abrasions, bruises, burns, cuts and lacerations, muscles strain and ruptures)
- 2.2 Tendons Ligaments, Cartilage, bursa and bone Injuries
- 2.3 Common site-specific injuries in sports Common regional injuries and their management (Head & Neck, Face, Thorax, Abdomen, Pelvis, Upper Limbs and Lower Limbs (shoulder, elbow, Wrist, hip, knee and Ankle joints).

**UNIT – III**

**Injury and Tissue Response**

- 3.1 Micro and Macro trauma
- 3.2 Over use Trauma
- 3.3 Tissue response to stress
- 3.4 Different steps in wound healing

**UNIT – IV**

**Doping in Sports**

- 4.1 Ergogenic aids in Sports
- 4.2 National and International Anti-doping organization and their role
- 4.3 Classification and types of drugs banned by WADA, Side effects of drugs
- 4.4 Blood doping, Types of Blood Doping

## PRACTICAL

### Sports Medicine

Course CODE: BSC/CC(P)/402

Course Code	Course Name	Credit	Teaching Hours	Internal Marks	External Marks	Total Marks
BSC/CC(P)/402	Sports Medicine	1	32	10	15	25

#### UNIT-I

- 1.1. Demonstrate how to set up an individual on a program for injury prevention or general fitness enhancement.
- 1.2. Describe and demonstrate the proper fit, care, and usage of sports protective equipment.
- 1.3. Common Rehabilitation exercises used in sports injury.
- 1.4. Strengthening and stretching of major muscles

#### UNIT-II

- 2.1. Arrangement of special lecturer on anti-doping rules
- 2.2. Demonstration and explanation of sample collection kit and procedure of sample collection
- 2.3. Explanation of Players form fill up procedure and checking shield equipment by an expert
- 2.4. Maintaining a practical record book

#### SUGGESTED READING

1. Andrew Pallas Beating Sports Injuries Mitchell Beazley (London) 2003.
2. Conley, M. (2000). Bioenergetics of exercise training. In T.R. Baechle, & R.W. Earle, (Eds.), Essentials of Strength Training and Conditioning (pp. 73-90). Champaign, IL: Human Kinetics.
3. David, R. M. (2005). Drugs in sports, (4th Ed). Routledge Taylor and Francis Group.
4. Ellis and Henderson Running Injury Free Rodal Press (Pennsylvania) 1994
5. Garick Webb Sports Injuries Diagnosis and Management W.B. Saunders Co. (London) 1990.
6. Jeyaprakash, C. S., Sports Medicine, J.P. Brothers Pub., New Delhi, 2003.
7. Khanna, G. L., (1990). Exercise physiology & sports medicine. Delhi: Lucky Enterprises. Mathew, D. K. & Fox, E. L, (1971). Physiological basis of physical education and athletics. Philadelphia: W.B. Saunders Co.
8. M.A. Hutson Sports Injuries Oxford University Press (New York) 1996.
9. Marcia K. Anderson and Malissa Martin Quick Reference Guide for Sports Injury Management Williams & Wilkins (London) 1998.
10. Martha Freeman Sonners Spinal Cord Injury Prentice Hall (New Jersey) 1992.
11. P.L. Karad Prevention and Treatment of Sports Injuries Khel Sahitya Kendra (New Delhi) 2011.
12. Pandey, P. K., (1987). Outline of sports medicine, New Delhi: J.P. Brothers Pub. Williams, J. G. P. (1962). Sports medicine. London: Edward Arnold Ltd.
13. Paul N. Taylor and Diane K. Taylor Conquering Athletic Injuries Human Kinetics (Canada) 1988.
14. Philip J. Morone Shoulder Injuries in Sports Aspen Publishers Inc. (London) 1992.
15. Robert Gunzburg and Marek Szpalski Whiplash Injuries Lippincott Williams & Wilkins (New York) 1998.
16. Terry R. Malone Throwing Injuries Williams & Wilkin

## SEMESTER –IV

### TACTICS, STRATEGIES AND TACTICAL DEVELOPMENT: Shooting

COURSE CODE: BSC/CC/403F

Course Code	Course Name	Credit	Teaching Hours	Internal Marks	External Marks	Total Marks
BSC/CC/403F	Tactics, Strategies and Tactical Development: Shooting	3	48	30	45	75

#### ESSENCE OF THE COURSE

This course is constructed for students to develop strategies, tactics and understand tactical development. It also focuses to understand about training aids that can help along in the process of training.

#### COURSE LEARNING OUTCOME

After completing this course, the student will be able to

- Learn to develop and apply tactics and strategies.
- Learn about motor ability and tactical development
- Learn and develop mental skills.
- Learn about how one can use training aids in their development process.

#### UNIT- I

##### Tactics & Strategy

- 1.1. Definition of Tactics and Strategies
- 1.2. Importance of tactics and strategies, its implementation
- 1.3. Tactical and strategic planning
- 1.4. Analysis of tactical and strategical application.

#### UNIT- II

##### Bio motor abilities and tactical development

- 2.1. Bio motor abilities development
- 2.2. Mechanical and physiological aspects in shooting.
- 2.3. Crisis management, coping with stressors and unpredictable situation during competition.
- 2.4. Improve focus to concentrate for longer duration

#### UNIT- III

##### Mental tools and skills.

- 3.1. Goal settings and Imagery
- 3.2. Relaxation and Energization
- 3.3. Self and Stress management
- 3.4. Attention and Self-Confidence.

## UNIT- IV

### **Training aids in Shooting development**

- 4.1 SCATT device and its role.
- 4.2 Chronograph and its role.
- 4.3 Video camera and its role.
- 4.4 Trigger sensor device and its role.



## SEMESTER –IV

### KINANTHROPOMETRY AND TALENT DEVELOPMENT IN SPORTS

COURSE CODE: BSC/SECC/02

Course Code	Course Name	Credit	Teaching Hours	Internal Marks	External Marks	Total Marks
BSC/SECC/02	Kinanthropometry and Talent Development in Sports	2	32	20	30	50

#### COURSE LEARNING OUTCOME:

After completing this course, the students will be able to

- Understand the concept and techniques of Anthropometry and Kinanthropometry.
- Understand Anthropometry profiling and evaluation.
- Understand the talent identification.

#### COURSE CONTENTS

##### UNIT – I

#### Anthropometry and Kinanthropometry

- 1.1 Introduction of Anthropometry and Kinanthropometry and its importance in sports
- 1.2 Basic Anthropometric tools, measurements and landmarks, Applications of Kinanthropometry in sports.
- 1.3 Somatotypes/Body Types/Body Physique and its relevance in sports, Body composition and its importance in sports.
- 1.4 Human Growth and Development.

##### UNIT – II

#### Anthropometric Profiling and Evaluation

- 1.1 Assessment technique of Somatotyping / Body typing.
- 1.2 Assessment technique of Body composition.
- 1.3 Assessment technique of Skeletal Diameter (Body Breadth) and Body Girth (Body Circumference).
- 1.4 Evaluation of Body composition by BIA (Bio Impedance Analysis) Instrument.

##### UNIT – III

#### Sports Talent Identification and development

- 3.1 Need and Importance of Talent Identification
- 3.2 Principles of talent identification and development
- 3.3 Talent Identification in relevant Sports, Long Term Athlete Development
- 3.4 Global scenario of talent identification, selection and development in relevant sports

## SUGGESTED READING

1. Singh S.P.S. and Malhotra P (2003). *Anthropometry*. Human Biology Department. Punjabi University. Patiala-147 002 (India).
2. Pheasant, S. (1996). *Body space: anthropometry, ergonomics and design of work*. Taylor & Francis, New York.
3. Sodhi, H.S., & Sidhu, L.S. (1984). *Physique and selection of sports- a kinanthropometric study*. Patiala: Punjab Publishing House.



## SEMESTER – IV

### ADAPTED SPORTS EDUCATION

COURSE CODE: BSC/GE/04

Course Code	Course Name	Credit	Teaching Hours	Internal Marks	External Marks	Total Marks
BSC/GE/04	Adapted Sports Education	2	32	20	30	50

### COURSE LEARNING OUTCOME

After completing this course, the students will be able to

- Understand the modern concept of adapted sports education.
- Understand classification of differently abled people.
- Understand adapted Sports education programme.

### COURSE CONTENTS

#### UNIT-I

##### Introduction to adapted sports education

- 1.1 Meaning, aim and objectives of adapted sports education
- 1.2 Brief historical review of adapted sports education
- 1.3 Need and importance of adapted sports education
- 1.4 Role of sports education in adapted sports education

#### UNIT-II

##### Classification of differently able people

- 2.1 Changing concept of differently able people.
- 2.2 Physically challenged, mentally challenged, Speech and Hearingchallenged and visually challenged.
- 2.3 Other Differently able Condition problems, Behavioral Problems-Adjustment Problem, learning disabilities, Emotional Problem.
- 2.4 Social Problem -Social Determination, Social Rejection

#### UNIT-III

##### Adapted Sports Education Programme

- 3.1. Guiding Principles for Adapted Sports Education Programme
- 3.2. Sports Programme for differently able students (Divyangjan)
- 3.3. Co-Curricular activities for differently ablestudents (Divyangjan)
- 3.4. Aquatic activity programmes for differently able; Rehabilitative role &importance of aquatic activity

**PRACTICAL**  
**Adapted Sports Education**  
**Course Code: BSC/GE(P)/04**

Course Code	Course Name	Credit	Teaching Hours	Internal Marks	External Marks	Total Marks
BSC/GE(P)/04	Adapted Sports Education	1	32	10	15	25

**Unit – I**

**Introduction of Specific Programmes for especially abled Child**

- 1.1. Adapted Exercise programme for visual impaired.
- 1.2. Adapted Exercise programme for hearing impaired.
- 1.3. Adapted Exercise programme for the people with upper body locomotor problem.
- 1.4. Adapted Exercise programme for the people with lower body locomotor problem.

**Unit – II**

**Introduction of Adapted Sports and its event**

- 2.1 Adapted Sports and its events programme for visual impaired.
- 2.2 Adapted Sports and its events programme for hearing impaired.
- 2.3 Adapted Sports and its events programme for the people with upper body locomotor problem.
- 2.4 Adapted Sports and its events programme for the people with lower body locomotor problem.

**SUGGESTED READINGS**

1. Anoop Jain, “Adapted Physical Education” Sports Publications, Ashok Vihar Delhi-52
2. Arthur G. Miller & James, “Teaching Physical Activities to impaired youth” John Wilag& Sons Inc. Canada.
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4. Auxter, Byler, Howtting, “Adapted Physical Education and reactions” Morbey-St. Louis Missouri.
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6. Shekar KC, Adapted Physical Education(KhelSahitya Kendra: New Delhi)-2005
7. Winnick JP, Adapted Physical Education and sport Human Kinetics USA, 2005
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**Semester – IV**  
**GENERAL CONDITIONING AND PERFORMANCE – IV: Shooting**  
**COURSE CODE: BSC/CCP/404F**

Course Code	Course Name	Credit	Teaching Hours	Internal Marks	External Marks	Total Marks
BSC/CCP/404F	General Conditioning and Performance – IV: Shooting	4	128	50	50	100

**Course Learning outcome**

- To develop motor fitness components
- To know about the types of stretching and exercises
- To improve shooting performance
- To organize conditioning classes

**Unit-I**

**Motor fitness component test**

- 1.1 Co-ordination test (hand eye) - Wall ball bounce.
- 1.2 Muscular endurance- Sit ups/ push-ups
- 1.3 Balance test- stork stand test/standing balance test
- 1.4 Cardiovascular endurance- Harvard step test/ 12 min Cooper test.

**Unit-II**

**Different types of stretching and exercises**

- 2.1 Static stretching
- 2.2 Dynamic stretching
- 2.3 Proprioceptive Neuromuscular Facilitation (PNF) stretching
- 2.4 Stretching exercises for shooting

**Unit-III**

**Sports performance test**

- 3.1 Competition match preparation
- 3.2 60 Shot match
- 3.3 Match analysis
- 3.4 Note on improvising

**Unit-IV**

**Conditioning**

- 4.1 Prehabilitation/Rehabilitation exercises.
- 4.2 Conditioning exercise based on strength.
- 4.3 Conditioning exercise based on core muscles.
- 4.4 Conditioning exercises based on endurance.

**Evaluation Total Mark 100**

Evaluation criteria	Internal Assessment	External Assessment
Physical Fitness test (All the fitness components)	15 Marks	15 Marks
Sports Performance test	15 Marks	15 Marks
PNF stretching Proficiency	10 Marks	10 Marks
Conditioning class and test administration proficiency	10 Marks	10 Marks
Total	50 Marks	50 Marks



## Semester – IV

### PRACTICAL: Shooting

COURSE CODE: BSC/CCP/405F

Course Code	Course Name	Credit	Teaching Hours	Internal Marks	External Marks	Total Marks
BSC/CCP/405F	Practical: Shooting	6	192	75	75	150

#### Learning outcome

- To learn how to improvise and make adjustments of equipment
- To improve sports performance
- To learn officiating at mixed team events
- To make corrections and make training plan on different subjects accordingly

#### UNIT-I

##### Improvisation of shooting equipments

- 1.1 Rectification and adjustments of equipments
- 1.2 Rifle trigger, grip, check plate, palm rest, sights and weights adjustments
- 1.3 Pistol trigger, grip adjustments, hand rest and weights adjustment
- 1.4 Pellets and ammunition testing

#### UNIT-II

##### Shot record proficiency test

- 2.1. 1 series of 10 shots and series analysis
- 2.2. 2 series of 10 shots and series analysis
- 2.3. 3 series of 10 shots and series analysis
- 2.4. 4 series of 10 shots and series analysis
- 2.5. 5 series of 10 shots and series analysis
- 2.6. 6 series of 10 shots and series analysis

#### UNIT-III

##### Officiating to conduct the finals of mixed team events

- 3.1. 10m Air rifle mixed team event qualification
- 3.2. 10m Air rifle mixed team event finals
- 3.3. 10m Air pistol mixed team event qualification
- 3.4. 10m Air pistol mixed team event finals

## UNIT-IV

### Faults, correction and training plan

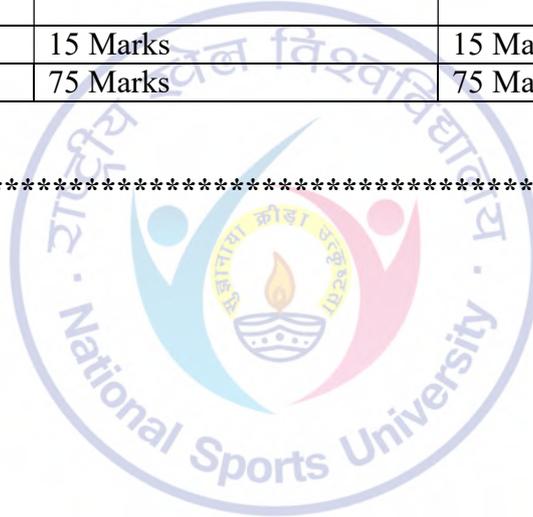
- 4.1. Detecting faults and correcting in relation to rifle event
- 4.2. Detecting faults and correcting in relation to pistol event
- 4.3. Making training plan on improving weak points and strong points
- 4.4. Dairy maintenance

### Submission of training record book at the time of practical examination

### Evaluation Total Mark 150

Evaluation criteria	Internal Assessment	External Assessment
Skill proficiency with technical aspects	20Marks	20Marks
Officiating Proficiency	20 marks	20 marks
Fault, correction and training plan	20 Marks	20 Marks
Record book and Viva	15 Marks	15 Marks
Total	75 Marks	75 Marks

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**SEMESTER – V**

<b>Course Code</b>	<b>Course Name</b>	<b>Credit</b>	<b>Teaching Hours</b>	<b>Internal Marks</b>	<b>External Marks</b>	<b>Total Marks</b>
<b>THEORY</b>						
BSC/CC/501	Sports Physiotherapy and Rehabilitation	2	32	20	30	50
BSC/CC/502	Sports Nutrition	2	32	20	30	50
BSC/CC/503	Research Method and Statistics in Sports	3	48	30	45	75
BSC/DSC/01	Sports Event Management	2	32	20	30	50
BSC/DSC/02F	Specific Motor Qualities of Sports and Games: Shooting	3	48	30	45	75
<b>LAB PRACTICAL</b>						
BSC/CC(P)/501	Sports Physiotherapy and Rehabilitation	1	32	10	15	25
BSC/CC(P)/502	Sports Nutrition	1	32	10	15	25
BSC/DSC(P)/02F	Specific Motor Qualities of Sports and Games: Shooting	1	32	10	15	25
<b>SPORTS PRACTICAL</b>						
BSC/CCP/504F	Age Group Sports Training: Shooting	4	128	50	50	100
BSC/CCP/505F	Practical: Shooting	6	192	75	75	150
<b>TOTAL</b>		<b>25</b>	<b>608</b>	<b>275</b>	<b>350</b>	<b>625</b>

NB: CC= Core Course, AECC=Ability Enhancement compulsory course,DSC= Discipline Specific Course, GE=Generic Elective, SECC= Skill Enhancement core course, CCP=Core course practical

## SEMESTER –V

### SPORTS PHYSIOTHERAPY AND REHABILITATION

#### COURSE CODE: BSC/CC/501

Course Code	Course Name	Credit	Teaching Hours	Internal Marks	External Marks	Total Marks
BSC/CC/501	Sports Physiotherapy and Rehabilitation	2	32	20	30	50

#### COURSE LEARNING OUTCOMES

After completing this course, the students will be able to

- Understand the Meaning, definition and importance of physiotherapy and therapeutic exercises
- Understand various types of therapeutic modalities
- Understanding the need and importance of rehabilitation and recovery.

#### COURSE CONTENTS

##### UNIT-I

##### Introduction to Physiotherapy

- 1.1 Definition, meaning and importance of Physiotherapy
- 1.2 Definitions of Therapeutic exercise, Classification, Effects and uses of different types of exercise.
- 1.3 Stretching- types of stretching, Passive Movements (Relaxed, Forced and passive - stretching) Active movements.
- 1.4 Strengthening Exercises, therapeutic means and methods of strengthening exercises

##### UNIT-II

##### Therapeutic Modalities

- 2.1 Definition of Hydrotherapy, Different forms of Hydrotherapy: Whirlpool, Contrast bath, (Indications & Contra-indications of each modality).
- 2.2 Thermotherapy – Hydrocollator Pack and Cryo-Therapy: Cold Packs, Cryo-Compression, Cryokinetics
- 2.3 Electrotherapy – Infrared rays – Ultraviolet rays – short wave diathermy – ultrasonic rays. IFT (interferential therapy) Brief Concept of electrical muscle stimulator, Paraffin wax and LASER therapy.
- 2.4 Manual Therapy and Massage

### UNIT-III

#### Sports Rehabilitation and Recovery

- 3.1 Definition concept & approach in athletic rehabilitation.
- 3.2 Principles of Rehabilitation
- 3.3 Phases of Athletic Rehabilitation, Role of Coaches in Athlete's Care and Rehabilitation
- 3.4. Medico biological means of recovery, Ice Bath, steam bath, Sauna bath, whirlpool bath

### PRACTICAL

#### SPORTS PHYSIOTHERAPY AND REHABILITATION

Course CODE: BSC/CC(P)/501

Course Code	Course Name	Credit	Teaching Hours	Internal Marks	External Marks	Total Marks
BSC/CC(P)/501	Sports Physiotherapy and Rehabilitation	1	32	10	15	25

#### UNIT-I

- 1.1. Relaxed, Forced and passive – stretching therapeutic exercises, PNF stretching
- 1.2. Strengthening Exercise (Isometric and Isotonic)
- 1.3. learn acute injury management
- 1.4. Relaxation techniques

#### UNIT-II

- 2.1 Operation of steam, sauna and whirlpool bath
- 2.2. Knowledge of operating instruments like IFT, Ultrasound, long and short-wave diathermy
- 2.3 Application of paraffin bath, Cryotherapy, compression bandaging, use of Kinesiotape
- 2.4 Massage technique

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4. David, R. M. (2005). Drugs in sports, (4th Ed). Routledge Taylor and Francis Group.
5. Hunter, M. D. (1979). A dictionary for physical educators. In H. M. Borrow & R. McGee, (Eds.), A Practical approach to measurement in Physical Education (pp. 573-74). Philadelphia: Lea &Febiger.
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8. Mathew, D. K. & Fox, E. L, (1971). Physiological basis of physical education and athletics. Philadelphia: W.B. Saunders Co.
9. Pandey, P. K., (1987). Outline of sports medicine, New Delhi: J.P. Brothers Pub.
10. Ray, Steven and Irvin Richard, Sports Medicine. (New Jersey: Englewood cliffa, Prentice Hall, 1983).
11. Williams, J. G. P. (1962). Sports medicine. London: Edward Arnold Ltd.



## SEMESTER –V

### SPORTS NUTRITION

COURSE CODE: BSC/CC/502

Course Code	Course Name	Credit	Teaching Hours	Internal Marks	External Marks	Total Marks
BSC/CC/502	Sports Nutrition	2	32	20	30	50

#### COURSE LEARNING OUTCOMES

After completing this course, the students will able to

- Understand Meaning, Definition, Aims and Objectives of Sports Nutrition, Mal nutrition and Balanced diet.
- Understand nutritional requirement of Sports person
- Concept of fluid and electrolyte replacement, values of vitamins and minerals, carbohydrate loading according to the requirement of sports

#### UNIT – I

##### Introduction to Nutrition

- 1.1 Meaning, Definition, Aims and Objectives of Sports Nutrition
- 1.2 Essentials of Nutrition, Carbohydrate-Protein-Fat-Vitamin-Minerals
- 1.3 Balance Diet and Nutritive values of food
- 1.4 Malnutrition and imbalance of nutrition

#### UNIT – II

##### Nutritional Requirement of Sports Person

- 2.1 Essential Dietary requirements of Sports persons.
- 2.2 Planning of athletic diets for different categories of sports
- 2.3 School students-College men and women, Team Sport-Athletics
- 2.4 Pre-game Meal, Obesity, Weight Control, Crash dieting and Eating Disorders, Bulimia, Anorexia Nervosa, Binge Eating

#### UNIT – III

##### Carbohydrate Loading and Metabolism

- 3.1 Metabolism, Hydration in Athlete
- 3.2 Food Safety –Factors Affecting Nutrition, Energy – BMR, RDA, Weight and Body Composition of Athletes
- 3.3 Diet during Sports competition for endurance athletes, carbohydrate loading, supplement to the daily diet,
- 3.4 Vitamins & Minerals, Fluids and electrolyte replacement, Calcium and iron supplementation

## PRACTICAL

### Sports Nutrition

Course CODE: BSC/CC(P)/502

Course Code	Course Name	Credit	Teaching Hours	Internal Marks	External Marks	Total Marks
BSC/CC(P)/502	Sports Nutrition	1	32	10	15	25

#### UNIT-I

- 1.1. Preparation of a Balanced Diet chart.
- 1.2 Obesity (Height, Weight Ratio), Body Mass Index and Calculation of Body Fat Percentage, planning of weight reduction in combat sports.
- 1.3. Nutritional assessment for Athletes and planning for nutrition for athletes.
- 1.4. Assessment of Eating Disorders.

#### UNIT-II

- 2.1. Designing a diet plan for different level of players and elite athletes.
- 2.1. Assessment of Hydration of athletes and planning of hydration strategies.
- 2.3 Assessment of hemoglobin deficiency and diet of athletes.
- 2.4. Designing carbohydrate loading plan for endurance sports person.

#### SUGGESTED READING

1. Benardot Dan, Advanced sports Nutrition, Human Kinetics, 2020.
2. Fink Heather Hedrick, JSports Nutrition, A Practical approach, Jones and Bartlett Learning, 6th ed
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**SEMESTER –V**  
**RESEARCH METHOD AND STATISTICS IN SPORTS**  
**COURSE CODE: BSC/CC/503**

<b>Course Code</b>	<b>Course Name</b>	<b>Credit</b>	<b>Teaching Hours</b>	<b>Internal Marks</b>	<b>External Marks</b>	<b>Total Marks</b>
BSC/CC/503	Research Method and Statistics in Sports	3	48	30	45	75

**COURSE LEARNING OUTCOME**

**After completing this course, the students will be able to**

- Understand types, nature, scope of Research
- Understand the classification of research and the research process.
- Identify various sources of information for literature review and data collection.
- Understand statistics and its application in sports research

**UNIT-I**

**Introduction to Research**

- 1.1 Meaning, definition and types of Research.
- 1.2 Characteristics of Good Research, Nature and Scope of Research in Sports.
- 1.3 Classification of Research, Location and identifying of research Problem, Criteria for Selecting a research Problem
- 1.4 Understand Research Format, chapters and writing synopsis

**UNIT-II**

**Methods of Research**

- 2.1 Descriptive Methods of Research: Survey and Case study, interview and questionnaire
- 2.2 Historical Research: Steps in Historical Research, Sources of Primary and Secondary Data, Internal and External Criticism.
- 2.3 Experimental Research – Meaning, Nature and Importance, Meaning of Variable, Types of Variables, Research Design.
- 2.4 Purpose of literature review, presenting the research hypothesis, Limitation, delimitation and significance of studies

**UNIT-III**

**Introduction to Statistics-I**

- 3.1 Meaning, Definition and Importance of Statistics in sports.
- 3.2 Quantitative and qualitative Data, tools and techniques of data collecting, population and sample
- 3.3 Class interval, Raw data, group and ungroup data, Construction of Table, Introduction to Graphic Techniques (Histogram, Bar chart and pie-diagram)
- 3.4 Measure of Central tendency, Calculation of Mean, Median & Mode

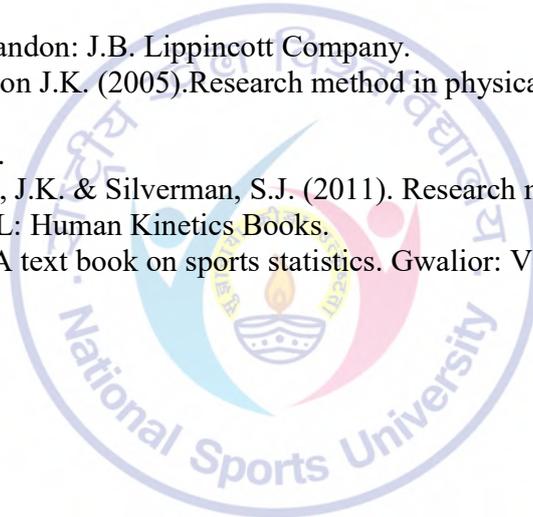
## UNIT-IV

### Introduction to Statistics-II

- 3.1 Normal Curve, skewness and kurtosis
- 3.2 Measure of Dispersion (Standard Deviation, Mean Deviation, Quartile Deviation)
- 3.3 Method of Calculation of Correlation
- 3.4 Types of t-test, interpreting t, relationship of t and r.

### SUGGESTED READINGS

1. Best, J.W. (1963). Research in education. U.S.A.: Prentice Hall.
2. Clark, H. H., & Clark, D. H. (1975). Research process in physical education. Englewood cliffs, New Jersey: Prentice Hall, Inc.
3. Garrett, H.E. (1981). Statistics in psychology and education. New York: VakilsFeffer and Simon Ltd.
4. Oyster, C. K., Hanten, W. P., & Llorens, L. A. (1987). Introduction to research: A guide for the health science professional. Landon: J.B. Lippincott Company.
4. Thomas, J.R., & Nelson J.K. (2005). Research method in physical activity. U.S.A: Champaign, IL: Human Kinetics Books.
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**SEMESTER –V**  
**SPORTS EVENT MANAGEMENT**  
**COURSE CODE: BSC/DSC/01**

<b>Course Code</b>	<b>Course Name</b>	<b>Credit</b>	<b>Teaching Hours</b>	<b>Internal Marks</b>	<b>External Marks</b>	<b>Total Marks</b>
BSC/DSC/01	Sports Event Management	2	32	20	30	50

**COURSE LEARNING OUTCOMES**

**After completing this course, the students will be able to**

- Identify various types of contemporary sporting events and role of event manager and staffs
- Understand budget, sponsorship and marketing system of event management
- Understand pre and post event evaluation, Risk Management and negligence

**COURSE CONTENT:**

**UNIT-I**

**Introduction**

- 1.1. Understanding Sport Facilities/ Planning, Importance of Sports Event Management
- 1.2. Different types of sports events
- 1.3. Event Planning Sequence, Opening and Closing ceremony
- 1.4. Event manager and role of management staffs and different committee

**UNIT-II**

**Budgeting, Sponsorship and Marketing**

- 2.1 Sports event budget, Planning and preparation of budget, Event Cost Estimate
- 2.2 Sponsorship, advertisement
- 2.3 Marketing strategies and Event Marketing
- 2.4 Media role and promotion

**UNIT-III**

**Event Management and Negligence:**

- 3.1 Sports Venue location and selection and facilities
- 3.2 Event and Game Day Management, Risk Management and negligence
- 3.3 Services and Logistics, Pre Event and Post event evaluation, evaluation of managing staffs
- 3.4 Crowded Management

**Suggested Reading:**

1. Guy Masterman, Strategic Sports Event Management: Third edition 3rd Edition, Routledge Edition, 2016.
2. Guy Masterman, Innovative Marketing Communications: Strategies for the Events Industry (Masterman & Wood, 2006)
3. Jordan Leslie-Ann, Sports Event Management: The Caribbean Experience (New Directions in Tourism Analysis) Routledge, 2010.
4. Stedman Graham the Ultimate Guide to Sport Event Management and Marketing, McGraw-Hill Education (19 January 1995)



**SEMESTER –V**  
**SPECIFIC MOTOR QUALITIES OF SPORTS AND GAMES: Shooting**  
**COURSE CODE: BSC/DSC/02F**

<b>Course Code</b>	<b>Course Name</b>	<b>Credit</b>	<b>Teaching Hours</b>	<b>Internal Marks</b>	<b>External Marks</b>	<b>Total Marks</b>
BSC/DSC/02F	Specific Motor Qualities of Sports and Games: Shooting	3	48	30	45	75

**ESSENCE OF THE COURSE**

This course is constructed to enable students to learn about coach and coaching aspects, plan and organize, know the aspects of training, performance structure and to maintain peak performance.

**COURSE LEARNING OUTCOME**

After completing this course, the student will be able to

- Learn how to make plans for different level of shooters.
- Learn about making annual, monthly, weekly and session plan.
- Have knowledge on all round training aspects.
- Have knowledge on training loads and adaptation.
- Know how to maintain peak performance level.

**UNIT- I**

**Coach and coaching philosophy**

- 1.1 Definition, meaning and introduction to coaching.
- 1.2 Philosophy of coaching.
- 1.3 Qualities and qualification of a Coach.
- 1.4 Types of Coaches and Athletes.

**UNIT- II**

**Planning and Organization**

- 2.1 Introduction on planning and organization.
- 2.2 Performance planning.
- 2.3 Periodization frame work.
- 2.4 Periods of training.

## UNIT--III

### Training

- 3.1 Physical training: Introduction on training plan, analysis of the basics, goal of physical training, aerobic training, anaerobic training, isometric training, strength training, endurance training, flexibility, relaxation and recovery.
- 3.2 Biomechanics, center of gravity and motor control
- 3.3 Mind training to improve sports performance.
- 3.4 Peak performance and maintenance: lifestyle management, nutrition intake, focused training.

## UNIT- IV

### Training load and adaptation in Shooting Sport

- 4.1. Training load.
- 4.2. Over loading.
- 4.3. Over training.
- 4.4. Adaptation.



Semester – V

**PRACTICAL**

**Specific Motor Qualities of Sports and Games: Shooting**

**COURSE CODE: BSC/DSC(P)/02F**

Course Code	Course Name	Credit	Teaching Hours	Internal Marks	External Marks	Total Marks
BSC/DSC(P)/02F	Specific Motor Qualities of Sports and Games: Shooting	1	32	10	15	25

**UNIT-I**

- 1.1. Administration of strength test for shooters in different age category
- 1.2. Administration Cardiovascular endurance test
- 1.3. Flexibility test
- 1.4. Speed test

**UNIT-II**

- 2.1 Coordination test
- 2.2. Balance test
- 2.3 Reaction time test
- 2.4 Agility test



**Semester – V**

**AGE GROUP SPORTS TRAINING: Shooting**

**COURSE CODE: BSC/CCP/504F**

<b>Course Code</b>	<b>Course Name</b>	<b>Credit</b>	<b>Teaching Hours</b>	<b>Internal Marks</b>	<b>External Marks</b>	<b>Total Marks</b>
BSC/CCP/504F	Age Group Sports Training: Shooting	4	128	50	50	100

**Learning Outcomes**

- To understand health and history background
- To understand systematization of sports training
- To develop fitness components
- To develop different training for Age Group

**UNIT-I**

**Talent identification and Age group training**

- 1.5. Knowledge on phases of growth and characteristics.
- 1.6. Procedure of talent identification.
- 1.7. Various tests used for talent identification & their interpretation.
- 1.8. Sources of talent identification in India.

**UNIT-II**

**Systematization of Sports Training Process**

- 2.1. Basic training
- 2.2. Advanced (Intermediate) training
- 2.3. High Performance training
- 2.4. Creating Proper Attitudes

**UNIT-III**

**Fitness Components for Age Group shooters**

- 3.1 Health related physical fitness abilities
- 3.2 Skill related physical fitness abilities
- 3.3 Specific motor abilities for shooting
- 3.4 Coordinative abilities for shooting

## UNIT-IV

### Training for different Age Group

- 4.1 Physical fitness training for shooting athlete
- 4.2 Psychological training for shooting athlete
- 4.3 Dry practice training
- 4.4 Live firing training

### Evaluation Total Mark 100

Evaluation criteria	Internal Assessment	External Assessment
Physical Fitness test All the fitness components	15 Marks	15 Marks
Talent identification	15 Marks	15 Marks
Conduct of Fitness class proficiency	10 Marks	10 Marks
Conduct of psychological training proficiency	10 Marks	10 Marks
Total	50 Marks	50 Marks



**Semester – V**

**PRACTICAL: Shooting**

**COURSE CODE: BSC/CCP/ 505F**

<b>Course Code</b>	<b>Course Name</b>	<b>Credit</b>	<b>Teaching Hours</b>	<b>Internal Marks</b>	<b>External Marks</b>	<b>Total Marks</b>
BSC/CCP/505F	Practical: Shooting	6	192	75	75	150

**Learning Outcomes**

- To learn and make training plan for sub youth category shooters
- To learn and make training plan for youth category shooters
- To learn and make training plan for Junior category shooters
- To learn and make training plan for Senior category shooters

**UNIT-I**

**Shooting training for Sub youth category (16 years below)**

- 1.1.Creating the training plan
- 1.2.Health record of an athlete
- 1.3.Integrating long and short term planning.
- 1.4Physical activity

**UNIT-II**

**Shooting training for youth category (16 to 18 years)**

- 2.1Creating the training plan.
- 2.2.Health record of an athlete
- 2.3.Integrating long and short term planning.
- 2.4.Physical activity

### UNIT-III

#### Shooting training for Junior category (18 years to 21 years below)

- 3.1 Creating the training plan.
- 3.2 Health record of an athlete
- 3.3 Integrating long and short term planning.
- 3.4 Physical activity

### UNIT-IV

#### Shooting training for Senior category (21 years and above)

- 4.1 Creating the training plan.
- 4.2 Health record of an athlete
- 4.3 Integrating long and short term planning.
- 4.4 Physical activity

#### Evaluation Total Mark 150

Evaluation criteria	Internal Assessment	External Assessment
Skill proficiency with technical aspects	20Marks	20Marks
Sub youth level training plan and schedule	10 marks	10 Marks
Youth level training plan and schedule	10 Marks	10 Marks
Junior level training plan and schedule	10 Marks	10 Marks
Senior level training plan and schedule	10 Marks	10 Marks
Record book and Viva	15 Marks	15 Marks
Total	75 Marks	75 Marks

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**SEMESTER –VI**

<b>Course Code</b>	<b>Course Name</b>	<b>Credit</b>	<b>Teaching Hours</b>	<b>Internal Marks</b>	<b>External Marks</b>	<b>Total Marks</b>
<b>THEORY</b>						
BSC/CC/601	Adventure Sports	3	48	30	45	75
BSC/CC/602	Sports Technology and Innovation	2	32	20	30	50
BSC/CC/603	Philosophy of Sports Coaching	2	32	20	30	50
BSC/DSC/03	Sports Pedagogy	3	48	30	45	75
BSC/DSC/04F	Tests, Measurements and Evaluation: Shooting	2	32	20	30	50
<b>LAB PRACTICAL</b>						
BSC/CC(P)/601	Adventure Sports	1	32	10	15	25
BSC/DSC(P)/03F	Sports Pedagogy	1	32	10	15	25
BSC/DSC(P)/04F	Tests, Measurements and Evaluation: Shooting	1	32	10	15	25
<b>SPORTS PRACTICAL</b>						
BSC/CCP/604F	Gender Based Sports Training: Shooting	4	128	50	50	100
BSC/CCP/605F	Practical: Shooting	6	192	75	75	150
<b>TOTAL</b>		<b>25</b>	<b>608</b>	<b>275</b>	<b>350</b>	<b>625</b>

NB: CC= Core Course, AECC=Ability Enhancement compulsory course,DSC= Discipline Specific Course,  
 GE=Generic Elective, SECC= Skill Enhancement core course, CCP= Core course practical

**SEMESTER –VI**  
**ADVENTURE SPORTS**  
**COURSE CODE: BSC/CC/ 601**

<b>Course Code</b>	<b>Course Name</b>	<b>Credit</b>	<b>Teaching Hours</b>	<b>Internal Marks</b>	<b>External Marks</b>	<b>Total Marks</b>
BSC/CC/601	Adventure Sports	3	48	30	45	75

**COURSE LEARNING OUTCOMES**

**After completing this course, the students will be able to**

- Understand about adventure sports and its classification
- Understand about mountain sports and their equipment and clothing
- Understand about water sports and their equipment and clothing
- Understand about aero sports and their equipment and clothing

**Unit I**

**Introduction to Adventure Sports**

- 1.1 Classification of Adventure Sports
- 1.2 Scope of Adventure Sports: New Trends, Training Institutes, Job Opportunities, Advantages & Disadvantages
- 1.3 Fitness Training: Physical Fitness Factors, Fitness Training & its Importance
- 1.4 Ethics & Qualities of an Adventure Expert.

**Unit II**

**Mountain Sports**

- 2.1 Definition of Mountaineering, History, Types: Trekking, Rock Climbing, Bouldering, Ice Climbing, Wall Climbing
- 2.2 Trekking: Mountain Manners, Trek Planning, Trekking sites in India.
- 2.3 Rock climbing: Principles, Route Planning, Holds, Equipment and Clothing
- 2.4 Knots: Thumb, Reef, Clove Hitch, Fisherman, Simple Bowline, Figure of Eight

**Unit III**

**Water Sports**

- 3.1 Types: Canoeing, Kayaking, Rafting, Scuba Diving, Water Skiing
- 3.2 Adventure sports sites in India
- 3.3 Rafting & Kayaking: Equipment, Clothing & Techniques
- 3.4 Scuba Diving: Equipment, Clothing & Techniques

**Unit IV**

**Aero Sports**

- 4.1 Types: Ballooning, Hang gliding, Paragliding, Parasailing, Skydiving
- 4.2 Hang gliding & Paragliding: Equipment, Clothing & Techniques
- 4.3 Parasailing: Equipment, Clothing & Techniques
- 4.4 Sky diving: Equipment, Clothing & Techniques

**PRACTICAL**  
**Adventure Sports**  
**COURSE CODE: BSC/CCP/601**

<b>Course Code</b>	<b>Course Name</b>	<b>Credit</b>	<b>Teaching Hours</b>	<b>Internal Marks</b>	<b>External Marks</b>	<b>Total Marks</b>
BSC/CCP/601	Adventure Sports	1	32	10	15	25

**UNIT-I**

- 1.1 Camping
- 1.2 Trekking, Hiking
- 1.3 Rock climbing/ artificial
- 1.4 Canoeing, kayaking, etc.

**UNIT-II**

- 2.1 Designing adventure Sports programme for School Children – Individual and Groups
- 2.2 Designing adventure Sports programme Sports for Youth – Individual and Groups
- 2.3 Designing adventure Sports programme Sports for Middle Aged People – Individual and Groups
- 2.4 Adventure sports equipment and its application

**Suggested Reading:**

1. Anker Conrad, Mountaineering the freedom hill, kindle ed., 2017
2. Berry Matt, Adventure Sports Coaching, Routledge; 1st edition (April 1, 2015)
3. Bob Gaines, Mastering Sports and Trad Climbing, Kindle 2018
4. Bob Gaines, Rock climbing for outdoor beginners, Kindle ed., 2020
5. Razzetta Sam, Canoe and Kayak Building the Light and Easy Way: How to Build Tough, Super-Safe Boats in Kevlar, Carbon, or Fiberglass (International marine-RMP), 2009
6. Randy pen, The handy box of knots: Useful knots for every situation, Indoor and Out, Sterling Innovation, 2017
7. Slight Steve and Ben Ainslie, The Complete Sailing Manual, 4th Edition, DK, 2017

**SEMESTER – VI**  
**SPORT TECHNOLOGY**  
**COURSE CODE – BSC/CC/602**

Course Code	Course Name	Credit	Teaching Hours	Internal Marks	External Marks	Total Marks
BSC/CC/602	Sport Technology	2	32	20	30	50

**COURSE LEARNING OUTCOME**

**After completing this course, the students will be able to**

- Understand the relevant technology and utilization of technology in sports.
- Understand the science of sports material and its implementation in enhance of Sports performance.
- Understand the different type of surface of play field.

**UNIT - I**

**Sports Technology**

- 1.1 Opportunities and challenges in sports technology.
- 1.2 The nature of Sports Technology and Data Science in sports performance
- 1.3 A scientific view on sports technology
- 1.4 Technologies for judging, umpiring and refereeing

**UNIT – II**

**Material Science in Sports**

- 2.1 Importance of Material Science in sports
- 2.2 The key aspects of materials processing, performance and disposal with respect to sustainability
- 2.3 Types of materials used in Playing Equipment, Balls, Footwear and sports garments.
- 2.4 Understanding the role of polymers in sports equipment

**UNIT – III**

**Artificial Sports Surfaces**

- 3.1 Modern surfaces for playfields, construction and installation of sports surfaces.
- 3.2 Types of surface materials: synthetic, wood, polyurethane. Artificial turf.
- 3.3 Importance of ergonomics in sports equipment
- 3.4 Maintenance of artificial turf and synthetic flooring. Case studies: synthetic sports surfaces

**Suggested Reading:**

1. Charles J.A. Crane, F.A.A. and Furness, J.A.G. (1987) "Selection of Engineering Materials" UK: Butterworth Heiremann.
2. Finn, R.A. and Trojan P.K. (1999) "Engineering Materials and their Applications" UK: Jaico Publisher.
3. John Mongilo, (2001), "Nano Technology 101 "New York: Green wood publishing group.
4. Kochar, S.K. Methods and Techniques of Teaching (New Delhi, Jullandhar, Sterling Publishers Pvt. Ltd.), 1982
5. Kozman, Cassidy and Jackson. Methods in Physical Education (W.B. Saunders Company, Philadelphia and London), 1952.



**SEMESTER –VI**  
**PHILOSOPHY OF SPORTS COACHING**  
**COURSE CODE: BSC/CC/603**

Course Code	Course Name	Credit	Teaching Hours	Internal Marks	External Marks	Total Marks
BSC/CC/603	Philosophy of Sports Coaching	2	32	20	30	50

**COURSE LEARNING OUTCOME**

**After completing this course, the students will be able to**

- Understand about introduction to and a comprehensive study of the philosophy of sport coaching.
- It is designed to examine the most significant questions that have arisen within the discipline of sports science.
- It may focus upon various ethical issues that arise within the sports and the function of games in human life.

**UNIT-I**

**Introduction to Sports Coaching Philosophy**

- 1.1 Meaning of Coaching Philosophy
- 1.2 Nature and significance of play and sports as a cultural phenomenon
- 1.3 Sport: An Historical Phenomenology
- 1.4 Fairness in sport: an ideal and its consequences.

**UNIT-II**

**Coaching Philosophy: Science and Art**

- 2.1. Coaching: Art, Science, Skill, style and secret of successful coaching.
- 2.2. Effective Practices, Knowledge- what makes a coach.
- 2.3. A Coach- Teacher- Trainer-motivator-disciplinarian –scientist, Coach as a Leader and leadership style in Coaching.
- 2.4. Moral and ethical values of Sports, ethics in sports coaching.

**UNIT- III**

**Developing a Coaching Philosophy**

- 3.1. Philosophy of a Coach and development of own coaching philosophy.
- 3.2. Long term and short-term coaching conception, Aesthetic appreciation and Intellectual creativity in coaching.
- 3.3. Performance development, improvement, management and maintenance.
- 3.4. Coaching Philosophy for diverse athletes and coaching for character, Leadership capacity and Responsible citizenship.

**Suggested Reading:**

1. Bucher, C.A.: Foundation of Physical Education, St. Louis: The C.V. Mosby company, 1983.
2. History and Philosophy of Sport and Physical Activity, Human Kinetics by R. Scott Kretchmar, Mark Dyreson, Matthew Liewellyn, John Gleaves, 2017.
3. Synder and Geoh: Professional preparation in Health Education, Physical Education and Recreation.
4. Barrow, H.M.: Man and Movement: Principles of Physical Education, Philadelphia Lea and Fabiger, 1977.
5. Joseph, P.M.: Organization of Physical Education, Kandivila,: Old students Association, T.I.P.E.
6. Kamlesh, M.L. and Sangral, M.S.: History and Principles of Physical Education, Prakash Brothers, 1983.
7. Wuest and Bucher: Foundations of Physical Education and Sports, B.I. Publications Pvt. Ltd., New Delhi.
8. William, H.F.: Physical Education and Sports in Changing Society, Surjeet Publication, Delhi.



**SEMESTER –VI**  
**SPORTS PEDAGOGY**  
**COURSE Code: BSC/DSC/03**

Course Code	Course Name	Credit	Teaching Hours	Internal Marks	External Marks	Total Marks
BSC/DSC/03	Sports Pedagogy	3	48	30	45	75

**COURSE LEARNING OUTCOME**

**After completing this course, the students will be able to**

- Understand the current issue in sports coaching Pedagogy
- Understand various teaching and coaching methods and coaching aids
- Preparation of lesson plans for various sports skill and Presentation techniques
- Utilize various teaching and coaching aids for the conduction of sports coaching.

**UNIT- 1**

**Introduction and current issue in Sports Coaching Pedagogy**

- 1.1 Meaning and definition of sports pedagogy
- 1.2 Current issues in sports coaching pedagogy
- 1.3 Technology and sports coaching
- 1.4 Sports Coach Education framework

**UNIT-II**

**Methods, Teaching and Coaching Aids**

- 2.1 Meaning, Importance and Types of Teaching and Coaching Aids.
- 2.2 Criteria for selecting Teaching Aids: Availability, Modification and, Scientific Aids
- 2.3 Simulation Teaching: Meaning, Types and steps of simulation teaching.
- 2.4 Types of Teaching Methods: Lecture, Command, Discussion, Workshop, Project, Demonstration, Imitation methods, and whole part whole methods

**UNIT-III**

**Coaching Lesson Plan and Presentation Technique**

- 3.1 Lesson Planning: Meaning, Importance, Types and Principles of lesson plans.
- 3.2 Presentation Techniques: Personal and Technical preparation, Steps of presentation – Demonstration, Explanation, Practice and, Rectification.
- 3.3 Class Construction and Classification:
- 3.4 Methods of Sports Coaching: Simple to Complex, Known to Unknown, Whole-Part-Whole Method, and Learning by Doing.

## Unit- IV

### Methods applied to teaching and training in sports

- 4.1 The difference between learning and doing
- 4.2 Individual attention to the player in teaching and learning process, types of practice skill;  
Fixed, massed, variable and distributed practice.
- 4.3 Evaluation of sports training and teaching
- 4.4 Connecting sports training to Life skill



**PRACTICAL  
SEMESTER – VI  
SPORTS PEDAGOGY (LESSON PLAN)**

**COURSE CODE: BSC/DSC(P)/ 03F**

<b>Course Code</b>	<b>Course Name</b>	<b>Credit</b>	<b>Teaching Hours</b>	<b>Internal Marks</b>	<b>External Marks</b>	<b>Total Marks</b>
BSC/DSC(P)/03F	Sports Pedagogy (Lesson Plan)	1	32	10	15	25

- The students will practice 15 coaching lessons.
- They will appear practical examination (Final Lesson) and evaluated by both internal and external examiner.

Total marks 100  
(Internal Marks 50 and external Marks 50)

**Lesson plan:**

Class formation  
Introduction  
Demonstration  
Explanation  
Kinesiological and Mechanical analysis  
Rectification  
Lead up activities  
Class Dismissal

<b>Evaluation</b>	<b>Internal assessment</b>	<b>External assessment</b>
Class formation introduction and Reporting	10 marks	10 marks
Demonstration	10 marks	10 marks
Explanation	10 marks	10 marks
Rectification and class control	10 marks	10 marks
Lead up activities, dismissal part and Time Management	10 marks	10 marks
<b>Total</b>	<b>50 Marks</b>	<b>50 Marks</b>

### Suggested Reading

1. Cassidy, T. (2004). Coaching methods. In C. Cassidy, R. Jones & P. Protrac (Eds). *Understanding Sports Coaching: The Social Cultural and Pedagogical Foundations of Coaching Practice* (pp26-37). London: Routledge.
2. Kidman, L. (2001). *Developing Decision Makers: An Empowerment Approach to Coaching*. Christchurch, NZ: Innovative Print Communications
3. Bhardwaj, A. (2003). *New media of educational planning*. New Delhi: Sarup of Sons.
4. Kochar, S. K. (1982). *Methods and techniques of teaching*. New Delhi: Sterling Publishers Pvt. Ltd.
5. Sampath, K., Pannirselvam, A. &Santhanam, S. (1981). *Introduction to EducationalTechnology*. New Delhi: Sterling Publishers Pvt. Ltd.
6. Walia, J. S. (1999). *Principles and Methods of Education*.Jalandhar: Paul Publishers.



**SEMESTER – VI**  
**TESTS, MEASUREMENTS, AND EVALUATION: Shooting**  
**COURSE CODE: BSC/DSC/04F**

Course Code	Course Name	Credit	Teaching Hours	Internal Marks	External Marks	Total Marks
BSC/DSC/04F	Tests, Measurements, and Evaluation: Shooting	2	32	20	30	50

**ESSENCE OF THE COURSE**

This course is specially design to know about the test, measurement and evaluation of athletes.

**COURSE LEARNING OUTCOME**

After completing this course, the student will be able to

- Learn and acquire practical knowledge on skill test.
- Learn to measure physical fitness and evaluate them.

**UNIT--I**

**Introduction to test and measurement**

- 1.1. Meaning of Test Measurement and Evaluation.
- 1.2. Nature and scope of evaluation programme.
- 1.3. Need and importance of evaluation in the field of physical education.
- 1.4. Principles of Evaluation.

**UNIT—II**

**Measurement of Physical Performance:**

- 2.1 Organic Functions: □ Cardiovascular and respiratory function
- 2.2 Cooper's 12 minutes continuous run-walk test and modificationso 12 minutes cycling test (Coopers)
- 2.3 Harvard step test and its modifications (High School and college level Men andWomen)
- 2.4 Tuttle Pulse ratio test; Hyman's Cardio pulmonary Index(CPI)

## UNIT--III

### Various types of test

- 3.1 Kraus Webber strength test
- 3.2 Stork balance stand test
- 3.3 Phillips J.C.R test
- 3.4 Core muscle and stability strength test



**PRACTICAL**  
**TESTS, MEASUREMENTS AND EVALUATION: Shooting**  
**Course CODE: BSC/DSC(P)/04F**

Course Code	Course Name	Credit	Teaching Hours	Internal Marks	External Marks	Total Marks
BSC/DSC(P)/04F	Tests, Measurements and Evaluation: Shooting	1	32	10	15	25

**UNIT-I**

- 1.1.Harvard step test
- 1.2.Tuttle Pulse ratio test
- 1.3.AAHPER youth fitness test
- 1.4.Cooper 12 minutes run and walk test

**UNIT-II**

- 2.1. Speed test 30m, 60m sprint
- 2.2. Core muscles and stability test
- 2.3 Coordination Assessment
- 2.4. Flexibility test

**Suggested Readings**

1. Bangsbo, J. (1994). Fitness training in football: A scientific approach. Bagsvaerd, Denmark: Ho+Storm.
2. Barron, H. M., &Mchee, R. (1997).A practical approach to measurement in physical education. Philadelphia: Lea and Febiger.
3. Barron, H.M. &Mchee, R. (1997).A Practical approach to measurement in physical education. Philadelphia: Lea and Febiger.
4. Kansal, D.K. (1996).Test and measurement in sports and physical education. New Delhi: D.V.S. Publications.
5. Mathews, D.K., (1973). Measurement in physical education, Philadelphia: W.B.SoundersCompnay.
6. Pheasant, S. (1996). Body space: anthropometry, ergonomics and design of work. Taylor & Francis, New York.
7. Phillips, D. A., &Hornak, J. E. (1979). Measurement and evaluation in physical education. New York: John Willey and Sons.
8. Sodhi, H.S., &Sidhu, L.S. (1984).Physique and selection of sports- a kinanthropometric study. Patiala: Punjab Publishing House.

**Semester – VI**

**PRACTICAL**

**GENDER BASED SPORTS TRAINING: Shooting**

**COURSE CODE: BSC/CCP/604F**

<b>Course Code</b>	<b>Course Name</b>	<b>Credit</b>	<b>Teaching Hours</b>	<b>Internal Marks</b>	<b>External Marks</b>	<b>Total Marks</b>
BSC/CCP/604F	Gender Based Sports Training: Shooting	4	128	50	50	100

**GENDER BASED SPORTS TRAINING**

**CODE: BSC/CCP/604F**

**Learning Outcome**

- To learn the health and history background of female athlete
- To learn about effects of exercises on female athlete in shooting sports
- To learn about female athlete shooting training
- To learn how to make training program for female athlete
- To learn about risk and sports injuries in woman

**UNIT-I**

**Health and History background**

- 1.1. Review of history and health records of female athlete
- 1.2 Psychological and social difference between the men and women athletes for training prospects.
- 1.3 Making training plan for the female athletes
- 1.4 Women athletes' diet

**UNIT-II**

**Shooting sports and the female athlete**

- 2.1. Introduction
- 2.2. Some risk for junior female athletes
- 2.3. The effects of intensive training on growth and maturation of female athletes
- 2.4. The effects of intense exercise on female reproduction system

### UNIT-III

#### **Fitness Components for women athletes.**

##### 3.1. Strength abilities

- 3.1. Speed abilities
- 3.2. Endurance abilities
- 3.3. Flexibility
- 3.4. Balance and Coordinative abilities

### Unit-IV

#### **Female athletes and training**

- 4.1 Physical and Physiological difference between the men and women athlete for training prospects.
- 4.2 Responsiveness to resistance training in women
- 4.3 Women athlete training schedule, volume and intensity at pre, during and menstrual cycle.
- 4.4 Sports Injuries: Women shooting training at injury, post injury and prolonged training gap

#### **Evaluation Total Mark 100**

Evaluation criteria	Internal Assessment	External Assessment
Physical Fitness test (All the fitness components)	15 Marks	15 Marks
Sports Performance	15 Marks	15 Marks
Women training plan	10 Marks	10 Marks
Psychological training and administration proficiency	10 Marks	10 Marks
Total	50 Marks	50 Marks

**Semester – VI**  
**Practical: Shooting**  
**COURSE CODE: BSC/CCP/605F**

Course Code	Course Name	Credit	Teaching Hours	Internal Marks	External Marks	Total Marks
BSC/CCP/605F	Practical: Shooting	6	192	75	75	150

**Learning Outcomes**

- To understand motor ability test
- To learn and understand the fitness test and test administration for shooting athletes.
- To improve shooting performance ability

**UNIT-I**

**Motor Ability Test 1**

- 1.1. Maximum strength test
- 1.2. Explosive strength test
- 1.3. Speed ability
- 1.4. Speed endurance
- 1.5. Endurance

**UNIT-II**

**Motor Ability Test 2**

- 1.1. Strength endurance
- 1.2. Acceleration ability
- 1.3. Flexibility
- 1.4. Agility and Balance

**UNIT--III**

**Fitness Tests administration for shooting athletes**

- 2.1. Kraus Webber strength test administration
- 2.2. Stork balance stand test administration
- 2.3. Phillips J.C.R test administration
- 2.4. BMI calculation

## UNIT-IV

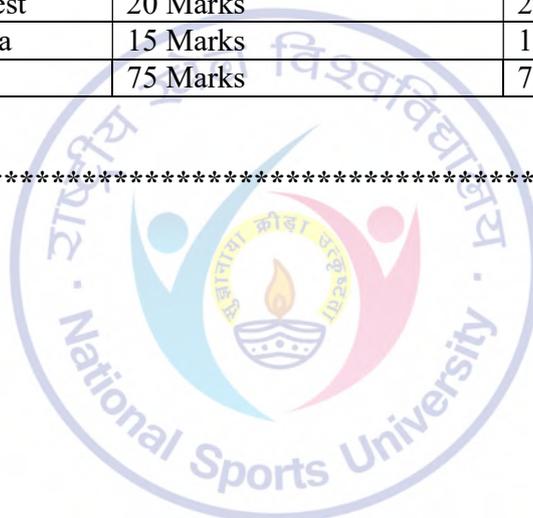
### Shooting performance test:

- 4.1. Accuracy
- 4.2. Grouping
- 4.3. Timing of shot
- 4.4. Total execution of shot

### Evaluation Total Mark 150

Evaluation criteria	Internal Assessment	External Assessment
Motor ability test	20Marks	20Marks
Fitness test administration	20 marks	20 marks
Sports performance test	20 Marks	20 Marks
Record book and Viva	15 Marks	15 Marks
Total	75 Marks	75 Marks

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**SEMESTER – VII**

<b>Course Code</b>	<b>Course Name</b>	<b>Credit</b>	<b>Teaching Hours</b>	<b>Internal Marks</b>	<b>External Marks</b>	<b>Total Marks</b>
<b>THEORY</b>						
BSC/CC/701F	Team Preparation and Match Analysis	3	32	30	45	75
BSC/CC/702	Community Coaching	3	32	30	45	75
<b>SPORTS PRACTICAL</b>						
BSC/CCP/701F	Team Preparation and Match Analysis	4	128	50	50	100
BSC/CCP/702F	Internship	8	256	50	150	200
BSC/CCP/703F	Aged People Sports Training: Shooting	4	128	50	50	100
BSC/D/704F	Dissertation: Research Proposal – Shooting	3	48	30	45	75
<b>TOTAL</b>		<b>25</b>	<b>640</b>	<b>240</b>	<b>385</b>	<b>625</b>

NB: CC= Core Course, AECC=Ability Enhancement compulsory course,DSC= Discipline Specific Course,  
 GE=Generic Elective, SECC= Skill Enhancement core course, CCP= Core course practical

## SEMESTER – VII

### TEAM PREPARATION AND MATCH ANALYSIS

COURSE CODE: BSC/CC/701F

Course Code	Course Name	Credit	Teaching Hours	Internal Marks	External Marks	Total Marks
BSC/CC/701F	Team Preparation and Match Analysis	3	48	30	45	75

#### COURSE LEARNING OUTCOME

**After completing this course, the students will be able to**

- Understand team preparation and match analysis
- Understand match preparation both individual and team sports
- Understand importance of pre match, in game and post-match
- Understand coach analysis intervention system

#### UNIT-I

##### Introduction to Team Preparation

- 1.1. Importance of team preparation and Match analysis
- 1.2. Team preparation for the competition period and competition schedule days
- 1.3. Match analysis its meaning, Need and importance of Match analysis
- 1.4. Equipment and technology required in match analysis

#### UNIT-II

##### Match Preparation Training both Individual and Team Sports

- 2.1. Team work and Tactics familiarity
- 2.2. Preparing alternate tactics both individual and team sports
- 2.3. Work, rest intensity training
- 2.4. Building targets into your training sessions

## UNIT-III

### Match Analysis

3.1 Coach Analysis Intervention System (CAIS)

3.2 Match analysis pre, during and post-match

3.3 Qualitative and quantitative analysis

3.4 Inclusion of Computer & Video Technology, Match analysis software



## PRACTICAL

### Team Preparation and Match Analysis

COURSE CODE: BSC/CC(P)/701F

Course Code	Course Name	Credit	Teaching Hours	Internal Marks	External Marks	Total Marks
BSC/CC(P)/701F	Team Preparation and Match Analysis	1	32	10	15	25

#### UNIT-I

- 1.1 Video presentation and match analysis technology by modern software
- 1.2 Showing presentation on match analysis pre competition and during completion
- 1.3 Using video technology in individual and team sports
- 1.4 Mechanical analysis of sports movement and fault correction

#### UNIT-II

- 2.1 Match preparation training schedule and tactics in individual sports
- 2.2 Match preparation training schedule and tactics in team games
- 2.3 Use of Coach Analysis Intervention System (CAIS)
- 2.4 Application of Modern Sports Officiating Technology

**SEMESTER – VII**  
**COMMUNITY COACHING**  
**COURSE CODE: BSC/CC/702**

<b>Course Code</b>	<b>Course Name</b>	<b>Credit</b>	<b>Teaching Hours</b>	<b>Internal Marks</b>	<b>External Marks</b>	<b>Total Marks</b>
BSC/CC/702	Community Coaching	3	48	30	45	75

**COURSE LEARNING OUTCOME:**

**After completing this course, the students will be able to:**

- Understand about community coaching
- Understand differentiation between community coaching and other types of coaching
- Volunteer services to the community for enhancement of societal value of sports
- Benefit of community coaching for society

**Unit-I**

**Introduction of Community Sports Coaching**

- 1.1 Meaning and definition of community coaching
- 1.2 Need and importance of Community coaching
- 1.3 Scope of community coaching
- 1.4 Differentiation between community coaching and other types of coaching

**Unit-II**

**Methods of Sports Coaching in Community**

- 2.1 Framework for Coaching in Community
- 2.2 Coaching for Relationships and Coaching for Reflection
- 2.3 Coaching for Results and Coaching for Reach
- 2.4 Coaching for Resilience

**Unit-III**

**Community Coaching and Development of Society**

- 3.1 Counseling and motivating athletes and parents for participation in sports Community coaching in Society development
- 3.2 Personal and transferability Developments
- 3.3 Life Skill Developments
- 3.4 Coaching Benefits of Communities

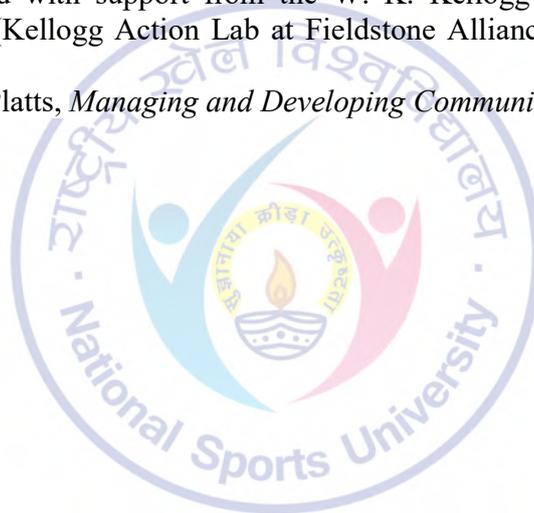
## Unit-IV

### Community Development: Role of Sports

- 4.1. Community Development through Sports for all initiative; Planning and execution.
- 4.2. Role of Community Coaching Organizations: Economic value, Health and environmental benefits, and social importance.
- 4.3. Art of counseling for active leaving and sports participation of novice participation
- 4.4. Art of effective communication for parents and spectators for participation in sports

### Suggested Reading

1. *Community Coaching Development, Khelo India schemes*, Government of India Ministry of Youth Affairs and Sports-2019.
2. Mary Emery, PhD, Ken Hubbell and Becky Miles-Polka, *A Field Guide to Community Coaching*, Published with support from the W. K. Kellogg Foundation, the Annie E. Casey Foundation, (Kellogg Action Lab at Fieldstone Alliance, and the Northwest Area Foundation-2011)
3. Rob Wilson, Chris Platts, *Managing and Developing Community Sport*, Published, 2018, CRC Press.



**Semester – VII**  
**PRACTICAL**  
**INTERNSHIP**  
**COURSE CODE: BSC/CCP/702F**

<b>Course Code</b>	<b>Course Name</b>	<b>Credit</b>	<b>Teaching Hours</b>	<b>Internal Marks</b>	<b>External Marks</b>	<b>Total Marks</b>
BSC/CCP/702F	Internship	8	256	50	150	200

Internship is an important component of sport coaching that provides students with the opportunity to gain applied practical experience in the field of sport coaching. It allows a student to employ what is learned in class in a supervised environment, which is critical in order to further develop professional skills and assure quality practice. Each student admitted to the B.Sc. in Sports Coaching course shall undergo 8 Credits (256 hours) compulsory internship programme at SAI Centres under Ministry of Youth Affairs and Sports (MYAS). The internship programme shall be of 200 marks.

**LEARNING OBJECTIVES OF INTERNSHIP:**

**The internship would examine the implementation of curriculum-based knowledge acquired by the Under Graduate Students which includes the following learning objectives:**

- Theories about coaching requirement and relevance for the sports and exercise participants.
- The social context within which sport coaching is applied.
- Methods and ways to carry out studies in the sports coaching with which the student shall be able to reflect upon the way these methods are applied for Sport Coaching as a profession.
- To acquire knowledge of the challenges faced by sports coaches and the ways to address them.

**ASSESSMENT CRITERIA FOR INTERNSHIP:**

<b>Sr. No.</b>	<b>Please evaluate this student intern on the following items:</b>	<b>Max. Marks</b>
1.	Arrived to work on-time (Punctuality, sincerity, dedication and devotion towards work)	15
2.	Behaved in a professional manner and dealing with players at SAI Centre	15
3.	Effectively performed Assignments given by Chief Coach/ Senior Coach/Asst. Coach of SAI.	15
4.	Communication skills PPT presentation to Players of the Centre (Sports related topic)	15
5.	Teaching lesson Ability (5 lesson)	15
6.	Coaching lesson Ability (5 lesson)	15
7.	Warming up (General & Specific), Cooldown and Conditioning class taken Ability	15
8.	Officiating ability of the Game	15
9.	Observation of records and register of the SAI Center and report writing on records and registers	15
10.	Observation of on Maintenance of Equipment and Play fields (Report writing about Maintenance of Play field and equipment)	15
<b>Total</b>		<b>150</b>
<b>INTERNAL ASSESMENT</b>		<b>50</b>
<b>TOTAL MARKS FOR INTERNSHIP</b>		<b>200</b>

## SEMESTER – VII

### AGED PEOPLE SPORTS TRAINING: Shooting

COURSE CODE: BSC/CCP/703F

Course Code	Course Name	Credit	Teaching Hours	Internal Marks	External Marks	Total Marks
BSC/CCP/703F	Aged People Sports Training: Athletics	4	128	50	50	100

#### Learning Outcomes

- To understand health and history background of Aged people
- To understand systematization of sports training
- To develop fitness components of Aged people
- To develop different training plan for Aged People

#### UNIT-I

##### Health and History background

- 1.1. Review of history and health records of an Aged people
- 1.2. Making plan for the different Aged people
- 1.3. Sports and Aged people
- 1.4. Healthy diets for Aged people

#### UNIT-II

##### Systematization of Sports Training Process

- 2.1. Basic training
- 2.2. Advanced (Intermediate) training
- 2.3. High Performance training
- 2.4. Training programme for Aged athletes

#### UNIT-III

##### Fitness Components for Aged people

- 3.1. Strength abilities
- 3.2. Endurance abilities
- 3.3. Speed abilities
- 3.4. Coordinative abilities and Flexibility

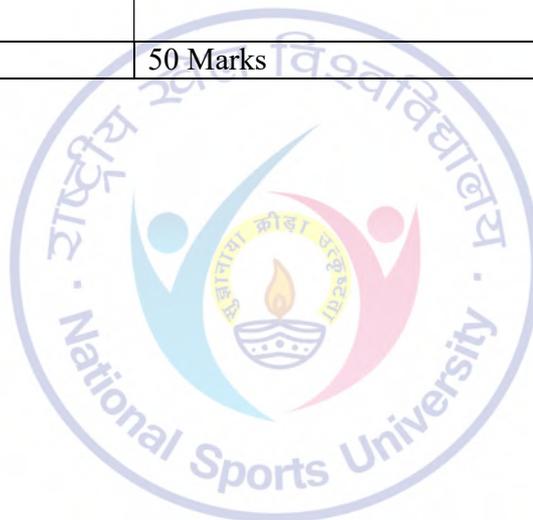
## UNIT-IV

### Training for Aged people

- 4.1. Fixation of the optimum target for training and competition performance.
- 4.2. Specific motor qualities development training
- 4.3. Prevention of injuries and safety precaution
- 4.4. Supplementary exercises for motor quality development of aged shooting athlete.

### Evaluation Total Mark 100

Evaluation criteria	Internal Assessment	External Assessment
Physical Fitness test All the fitness components	15 Marks	15 Marks
Sports Performance test	15 Marks	15 Marks
Training programme	10 Marks	10 Marks
Motor quality development training and administration proficiency	10 Marks	10 Marks
Total	50 Marks	50 Marks



**SEMESTER – VII**  
**DISSERTATION: RESEARCH PROPOSAL - Shooting**

**COURSE CODE: BSC/D/704F**

<b>Course Code</b>	<b>Course Name</b>	<b>Credit</b>	<b>Teaching Hours</b>	<b>Internal Marks</b>	<b>External Marks</b>	<b>Total Marks</b>
BSC/D/704F	Dissertation: Research Proposal - Shooting	3	48	30	45	75

**LEARNING OBJECTIVES**

To enable the students to develop skills and competencies for conducting rigorous, theoretically correct and practically relevant research in Bachelors of Science Sports Coaching.

**LEARNING OUTCOME:**

- By completing the Bachelors thesis, students will demonstrate their academic ability, i.e., their ability to think critically, write according to academic standards, and conduct independent research that is critical, methodical, and systematic.
- A student admitted to B.Sc. Sports Coaching must submit his/her Synopsis and get it approved by the Head of Department on the recommendation of Department Research Committee (DRC).
- The beginning of the process of Dissertation will start in the beginning of VII Semester in form of preparation and submission of synopsis, facing and getting final approval from the DRC.
- The Final Dissertation must be submitted not less than one week before the beginning of the VIII Semester Examination.
- The candidate has to face the Viva-Voce examination conducted by DRC.

**Structure of the Synopsis:**

- 1. Title Page**
  - 2. Certificate**
  - 3. Acknowledgements**
  - 4. Table of Contents**
- ▶ Chapter 1: Introduction
  - ▶ Chapter 2: Review of Literature
  - ▶ Chapter 3: Methods

## References

**Evaluation:**

**Credit: 3**

**75 Marks**

The students will present their Synopsis through PPT in front of Supervisor and Departmental Research Committee (DRC). Both Supervisor and DRC will evaluate their synopsis presentation and Viva.

**Internal Assessment 30 marks (Supervisor)**

**External Assessment 45 marks (DRC)**

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**SEMESTER – VIII**

<b>Course Code</b>	<b>Course Name</b>	<b>Credit</b>	<b>Teaching Hours</b>	<b>Internal Marks</b>	<b>External Marks</b>	<b>Total Marks</b>
<b>THEORY</b>						
BSC/CC/801	Science of Yoga	3	48	30	45	75
BSC/CC/802	Introduction to Paralympic and Special Olympic	3	48	30	45	75
<b>PRACTICAL</b>						
BSC/CC(P)/801	Science of Yoga	1	32	10	15	25
BSC/CC(P)/802	Introduction to Paralympic and Special Olympic	1	32	10	15	25
<b>SPORTS PRACTICAL</b>						
BSC/CCP/803F	Advance Coaching Lesson: Shooting	6	192	75	75	150
BSC/CCP/804F	High Performance Sports Training: Shooting	4	128	50	50	100
BSC/D/805F	Dissertation: Shooting	7	112	75	100	175
<b>TOTAL</b>		<b>25</b>	<b>592</b>	<b>280</b>	<b>345</b>	<b>625</b>

NB: CC= Core Course, AECC=Ability Enhancement compulsory course,DSC= Discipline Specific Course, GE=Generic Elective, SECC= Skill Enhancement core course CCP= Core course practical, D = Dissertation

## SEMESTER – VIII

### SCIENCE OF YOGA

#### COURSE CODE: BSC/CC/801

Course Code	Course Name	Credit	Teaching Hours	Internal Marks	External Marks	Total Marks
BSC/CC/801	Science of Yoga	3	48	30	45	75

#### LEARNING OUTCOME

After completing this course, the students will be able to acquire knowledge about

- Understand the concept of yoga and historical background.
- Understand different school of yoga
- Practical and theoretical knowledge about yogic practice of Kriyas, asanas, pranayamas, and different meditation techniques.

#### UNIT – I

##### Introduction and historical background of Yoga

- 1.1 Meaning, Definitions and Historical background of Yoga
- 1.2 Aim & Objectives of Science Yoga, Ayurveda: Yoga and Vayayama
- 1.3 Contribution of ancient Yogic text for the development of Science of Yoga
- 1.4 Application of Yoga in modern society

#### UNIT – II

##### Different Schools of Yoga

- 2.1 Introduction to different schools of Yoga.
- 2.2 The Astanga Yoga: Yama, Niyama, Asana, Pranayama, Pratyahara, Dharana, Dhyana and Samadhi.
- 2.3 Types of Yoga: Karma Yoga, Bhakthi Yoga, Jnana Yoga, Raja Yoga, Hatha Yoga etc.
- 2.4 Meditation, Strategies for relaxing body and mind, Various method of relaxation techniques

#### UNIT – III

##### Introduction to various practices of Yoga and its implications in sports specific training

- 3.1 Shatkarma – Meaning, Types, techniques, Precautions and Benefits
- 3.2 Asanas - Meaning, Definitions, Types, Techniques, Precautions and benefits
- 3.3 Pranayama - Meaning, Definitions, Types, Techniques, Precautions and benefits
- 3.4 Mudras – Meaning, Types, Technique, Precautions and Benefits

#### UNIT-IV

##### Yoga Art and Science

- 4.1 Yoga is an art, Science and Philosophy: a critical analysis
- 4.2 Difference between yogic practices and physical exercises
- 4.3 Yoga for lifestyle diseases
- 4.4 Application of Yoga in sports performance

## PRACTICAL

### Science of Yoga

COURSE CODE: BSC/CC(P)/801

Course Code	Course Name	Credit	Teaching Hours	Internal Marks	External Marks	Total Marks
BSC(P)/801	Science of Yoga	1	32	10	15	25

#### Unit-I

##### Yogic Kriya, Yogasana and Mudras and its practices and implication in Sports

- 1.1.Kriya-kapalbhati, Trataka, Nauli
- 1.2.Asana- Standing, Sitting, Laying
- 1.3 Surya Namaskar and Chandra Namaskar
- 1.4 Mudras

#### Unit- II

##### Pranayama and Dhayana and its practices and implication in Sports

- 2.1. Pranayama- Balancing, Heating, Cooling
- 2.2. Dhyana for beginners and intermediates
- 2.3 Stress management through yoga
- 2.4 Development of concentration through yoga

#### SUGGESTED READING

1. Muktibodhananda S. (2013). *Hatha Yoga Pradipika*, Munger, Bihar School of Yoga Publication (3<sup>rd</sup> ed.). ISBN-10:9788185787381
2. Niranjana S. S. *GherandaSamhita*. (2012).Munger, Bihar School of Yoga. Publication ISBN-9789381620199
3. Maheshananda S, Sharma B.R., Sahay GS, BodhaR.K, Jha B.L, Bharadwaj C.L. (2009).*Siva Samhita*.Lonavalla,Kaivalyadhama Publication. ISBN: 9788189485535
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8. Iyengar B.K.S. (2003). *Light on Yoga*, USA, HarperCollins. ISBN: 8172235011
9. Mondal S. (2013). Science of exercise: ancient Indian origin. *J Assoc Physicians India* . 61: 40-42.

## SEMESTER – VIII

### INTRODUCTION TO PARALYMPIC AND SPECIAL OLYMPIC

**COURSE CODE: BSC/CC/802**

Course Code	Course Name	Credit	Teaching Hours	Internal Marks	External Marks	Total Marks
BSC/CC/802	Introduction to Paralympic and Special Olympic	3	48	30	45	75

#### **COURSE LEARNING OUTCOME:**

**After completing this course, the students will be able to**

- To understand the Paralympic sport, rules & regulations and also learn the history of Paralympic
- Understand the classification and laws of Paralympic sports
- Understand the Special Olympic rules and regulation.
- Understand Special Olympic sports events, equipment and training.

#### **COURSE CONTENTS**

##### **UNIT-I**

#### **Paralympic Sports**

- 1.1 History of Paralympic movement and Special Olympics.
- 1.2 Rules and regulations of Paralympic.
- 1.3 Paralympic Committee: International and National
- 1.4 Ceremonies of Paralympic: opening, closing and event management

##### **UNIT-II**

#### **Paralympics Sports Classification**

- 2.1 Introduction to Paralympic sports classification.
- 2.2 Eligibility criteria: medical classification & functional classification.
- 2.3 Steps of Classification: eligible impairment, minimum disability criteria and sport class.
- 2.4 Category of summer & winter Paralympic

## **UNIT-III**

### **Paralympic Laws**

- 3.1 System of Paralympic Governance on National and International Level.
- 3.2 Fundamental principles of Paralympic movement.
- 3.3 Human Right in Paralympic context.
- 3.4 Performance enhancement regulation in Paralympic context: medicine, equipment and new technology.

## **UNIT-IV**

### **Special Olympic Sports Events, Equipment and Training**

- 4.1 Special Olympic Sports events and its Classification, rules and regulation.
- 4.2 Special Olympic Sports Equipment and its utilization
- 4.3 Special Olympic Sports Training Methodology and New Technology
- 4.4 Preparation of Officials, Coaches and Supporting Staff for Special Olympic



## PRACTICAL

### INTRODUCTION TO PARALYMPIC AND SPECIAL OLYMPIC

Course CODE: BSC/CC(P)/802

Course Code	Course Name	Credit	Teaching Hours	Internal Marks	External Marks	Total Marks
BSC/CC(P)/802	Introduction to Paralympic and Special Olympic	1	32	10	15	25

#### UNIT-I

- 1.1 Designing various types of exercises for impaired muscle power person
- 1.2 Designing various types of exercise for limb deficiency person
- 1.3 Designing various types of exercise and sports for Paralympic Sports Person
- 1.4 Paralympic Sports Events and planning.

#### UNIT- II

- 2.1 Designing various types of exercise and Sports for Hearing Impairment
- 2.2 Designing different types of exercise and Sports for Vision Impairment
- 2.3 Designing different types of exercise and Sports for Intellectual Impairment
- 2.4 Special Olympic Sports events

#### Assessment of individual potential and design special training plan

#### SUGGESTED READING

1. "Assistive technologies". Spaulding Framingham. Retrieved September 5, 2012.
  - a. 2004. 376 ps.
2. Anoop Jain, "Adapted Physical Education" Sports Publications, Ashok Vihar Delhi-52
3. Arthur G. Miller & James, "Teaching Physical Activities to impaired youth" John Wilag& Sons Inc. Canada.
4. Arthur S. Daniels & Euilya, "Adapted Physical Education", Harpet& Row Publisher- New York.
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10. James A. R. Nafziger, Stephen F. Ross. Handbook on International Sports Law. Edward
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18. Shekar KC, Adapted Physical Education (KhelSahitya Kendra: New Delhi)-2005
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20. Steve Bailey. Athlete First: A History of the Paralympic Movement. John Wiley &
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## SEMESTER – VIII

### ADVANCE COACHING LESSON: Shooting

COURSE CODE: BSC/CCP/803F

Course Code	Course Name	Credit	Teaching Hours	Internal Marks	External Marks	Total Marks
BSC/CCP/803F	Advance Coaching Lesson: Shooting	6	192	75	75	150

- The students will practice 15 coaching lessons for elite players.
- They will appear practical examination (Final Lesson) and evaluated by both internal and external examiner.

#### **Total marks 100**

(Internal Marks 50 and external Marks 50)

#### **Lesson plan:**Class formation

Introduction  
Demonstration  
Explanation  
Kinesiological and Mechanical analysis  
Rectification  
Performance analysis  
Lead up activities  
Class Dismissal

Evaluation	Internal assessment	External assessment
Class formation introduction and Reporting	10 marks	10 marks
Demonstration	10 marks	10 marks
Explanation	10 marks	10 marks
Rectification and class control	10 marks	10 marks
Performance Analysis	10 marks	10 marks
<b>Total</b>	<b>50 Marks</b>	<b>50 Marks</b>

**SEMESTER – VIII**  
**HIGHPERFORMANCE SPORTS TRAINING: Shooting**  
**COURSE CODE: BSC/CCP/804F**

Course Code	Course Name	Credit	Teaching Hours	Internal Marks	External Marks	Total Marks
BSC/CCP/804F	High Performance Sports Training: Shooting	4	128	50	50	100

**Learning Outcomes**

- To understand High-Intensity Intermittent (HIIT) training methods.
- To understand and learn about coach and athlete training methods.
- To understand the knowledge of scientific principles in training and coaching.
- To master the shooting skills in shooting.

**UNIT-I**

**High-intensity intermittent exercise (HIIT) training systems**

- 1.1.Components of high intensity intermittent exercises.
- 1.2.Effect of long term practice of high intensity intermittent exercises.
- 1.3.TABATA training- for high intensity intermittent training methods.
- 1.4.Effect of TABATA training on the body's aerobic and anaerobic energy system.

**UNIT-II**

**Coaches and athlete training**

- 2.1 High altitude training for shooting athletes.
- 2.2 Practice and compete at different range and environment
- 2.3 Risk management: Coaches
- 2.4 Coaches communication with the athlete and support staffs
- 2.5 Early vs. late maturing athletes

**UNIT-III**

**Talent selection and development of shooting sports**

- 3.1 Talent selector Vs. Talent identifiers
- 3.2 Age, Gender, Genetics and Physical fitness and anthropometric data
- 3.3. Intelligence, practicing styles, psychology
- 3.4. Talent selection and direction stages
- 3.5. Special shooting sports centers (School/Academy/Camps)

## UNIT-IV

### **Shooting performance.**

- 4.1. Match and finals competition
- 4.2. Record Shots– Matches (Score based training and improvisation).
- 4.3. Analysis of match and finals.
- 4.4. Mastering technique and Sequence Training: shot rhythm, series sequence -overall coordination

### **Evaluation Total Mark 150**

Evaluation criteria	Internal Assessment	External Assessment
Competition match proficiency	20Marks	20Marks
Coaching and teaching proficiency	20 marks	20 marks
High-intensity intermittent exercise (HIIT) training systems and administration proficiency	20 Marks	20 Marks
Record book and Viva	15 Marks	15 Marks
Total	75 Marks	75 Marks

## SEMESTER – VIII

### DISSERTATION: Shooting

#### COURSE CODE: BSC/D/805F

Course Code	Course Name	Credit	Teaching Hours	Internal Marks	External Marks	Total Marks
BSC/D/805F	Dissertation: Shooting	7	112	75	100	150

### DISSERTATION

This document provides preparation for Dissertation including guidelines for structuring the contents. For style, structure and presentation of the Dissertation, students will consult their respective supervisors and refer to style manuals or reference guides lines given by University.

#### Preparation of Manuscript and Copies

The Dissertation needs to be prepared using a standard text processing software and must be printed in black text (color for images, if necessary) using a laser printer or letter quality printer in standard type face (Times New Roman/ Arial).

The Dissertation must be printed or photocopied on both sides of white paper. All copies of Dissertation pages must be clear, sharp and even, with uniform size and uniformly spaced characters, lines and margins on every page of good quality white bond paper of 75 gsm or more. **(How so ever the students are advised to prepare in the format given and submit in PDF Format to their respective Guide and to the Department duly signed by them, the hard copies as per the specification provided has to be submitted for record.)**

Dissertation should be free from typographical errors.

#### Binding

The student should submit the copies of the Dissertation in fully bound form (soft cover) or a partially bound form (coiled wire binding, clamping, or filing). Once the Dissertation is accepted, it is the student's responsibility to get it properly bound before depositing the required number of copies with the Department concerned. **The front cover of the bound copy should be the same as the title page of the Dissertation.** The front cover should have printing on the side to include the author's name, abbreviated thesis title (optional), degree, department, and the year.

**Note: The students will follow the guidelines for their Dissertation given by the University.**

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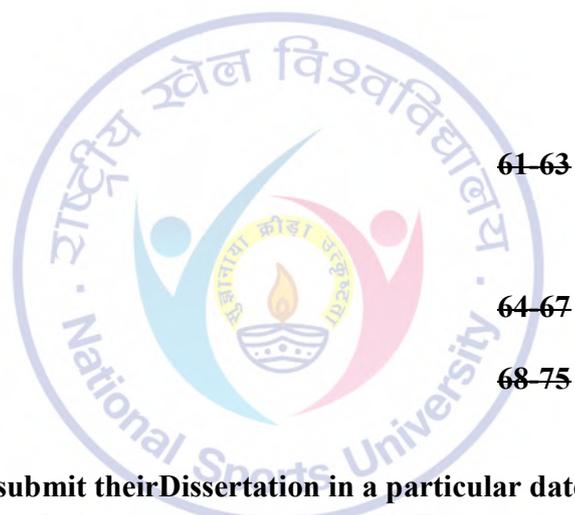
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**APPENDICES**

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**N.B.All the students will submit theirDissertation in a particular date notified by the HOD. Both supervisor and external examiner will evaluate the Dissertation. The student will present their chapters through power points.**

**Total Marks 175**

**Internal assessment: 75 Marks and External Assessment 100 Marks.**

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