



**राष्ट्रीय खेल विश्वविद्यालय
मणिपुर
केन्द्रीय विश्वविद्यालय
युवाकार्यक्रम एवं खेलमंत्रालय
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: Weight Lifting

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: Weight Lifting SEMESTER -
I

Course Code	Course Name	Credit	Teaching Hours	Internal Marks	External Marks	Total Marks
THEORY COURSE						
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/103H	Historical Development and Organizational Structure: Weight Lifting	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
LAB PRACTICAL						
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
SPORTS PRACTICAL						
BSC/CCP/104H	General Conditioning and Performance – I: Weight Lifting	4	128	50	50	100
BSC/CCP/105H	Practical: Weight Lifting	6	192	75	75	150
TOTAL		25	592	275	350	625

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, 6th 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: Weight Lifting

COURSE CODE: BSC/CC/103H

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

ESSENCE OF COURSE

This course will enable student to understand history of weightlifting. It aims to develop understanding organization of weightlifting competition from district to International level and required facilities for weightlifters.

COURSE LEARNING OUTCOMES

- After completing this course, the student will be able to understanding the origin and development history of Weightlifting in world, Asia and India.
- Fundamental Rules and competition equipment
- Understand fundamental coaching concept of weightlifting
- Facilities and equipmentsrequired for weightlifting competition and training.

UNIT- I

History of Weightlifting.

- 1.1 Origin and History of Weightlifting in India and World.
- 1.2 Modern Olympic Games and World Championships in Weightlifting.
- 1.3 Asian games and Commonwealth Games and Weightlifting.
- 1.4 Participation and achievements of Indian male and female weightlifters at International Competitions.

UNIT- II

Development of Weightlifting Coaching in India

- 2.1.Historical development of Sports coaching in India
- 2.2.Historical development of weightlifting coaching in India
- 2.3. History of Indian weightlifting federation and state association
- 2.4 Ancient Indian weight training exercises, Akhada culture and Indian club, stone lifting exercises

UNIT- III

Organization and Management of Weightlifting Competitions

- 3.1 Meaning, Definition and Importance of Organization, Administration and Management in Weightlifting Competition
- 3.2 Organization of Weightlifting competition (District, State, National)
- 3.3 Organization and management of weightlifting competitions in International Level.
- 3.4 Organization of Intramural competition.

UNIT- IV

Facilities and equipments for weightlifting

- 4.1 Facilities for Modern Weightlifting training and Competition hall.
- 4.2 Construction and Maintenance of the re-in forced Weightlifting Platform.
- 4.3 Specifications of Weightlifting training equipments :- Squat Racks, Box's, Mini Platform, Super Power Racks, Multipurpose Bench for Bench Press, Dumbbells, Parallel Bar, Horizontal Bar, Wall Bars, practice and competition platform and swing bells.
- 4.4 Personal Gadgets and their Specifications for the Training:- (Shoes, Belt, Costume, shorts, socks, Bandages, Gloves ,Tapes sticking plasters).

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
THEORY COURSE						
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: Weight Lifting

Course Code: BSC/CCP/104G

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

Learning Outcomes

- To understand general and specific warming up before specific training in weightlifting.
- Develop skill related fitness and learn basic exercises for different components
- To learn special warming up exercises.
- To learn conditioning exercises.

UNIT-I

General warming-up, Specific warm-up and cooling down exercises

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

UNIT-II

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

- 2.1 Speed test- 30 meter dash/ 50 meter dash.
- 2.2 Agility test- Shuttle run/ Burpee test.
- 2.3 Flexibility test- Sit and reach test/Scott and French test.
- 2.4 Coopers 12 minutes run and walk test.

UNIT-III

Practical knowledge about completion hall, training equipments

- 3.1 Specifications of modern weightlifting training hall.
- 3.2 Specifications of weightlifters personal kits.
- 3.3 Specification of Weightlifting platform and stage (Training and Competition)
- 3.4 Maintenance of weightlifting hall and equipments.

UNIT-IV

Sports specialization performance test

- 4.1 Snatch 1 RM
- 4.2 Clean 1 RM
- 4.3 Jerk 1 RM
- 4.4 Squat 1 RM

Evaluation Total Mark 100

Evaluation criteria	Internal Assessment	External Assessment
General and specific Warming up	10Marks	10Marks
Physical Fitness test All the fitness components	20 Marks	20 Marks
Sports Performance	20 marks	20 marks
Total	50 Marks	50 Marks

SEMESTER - I

PRACTICAL: Weight Lifting

Course Code: BSC/CCP/ 105H

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

Learning outcomes:

- Weightlifting Techniques and their application during training.
- Practicing weightlifting supplementary exercises.
- Practicing weightlifting skills.
- Learn different starting position in weightlifting.

Basic Techniques in Two Hand Snatch

- 1.1 Introduction to the bar
- 1.2 Stance for Snatch
- 1.3 Holding the bar (Grip and width)
- 1.4 Pull the bar. (1st, 2nd, 3rd)

UNIT-II

Basic Techniques in Two Hand Clean and Jerk

- 2.1 Introduction to the bar
- 2.2 Stance for Clean and grasping the bar, width of the grip
- 2.3 Pull the bar during clean. (1st, 2nd, 3rd pull)
- 2.4 Basic techniques for jerk (Split and Squat techniques)

UNIT-III

Basic Techniques for Weightlifting Starting Techniques

- 3.1 Starting start
- 3.2 Dynamic start
- 3.3 Variations of dynamic start (Rocking, Pumping, Dive)
- 3.4 Specifications of weightlifting equipments (Man and women barbell, Dices)

UNIT-IV

Supplementary Exercises for Development of the Performance of Snatch and Clean & Jerk

- 4.1 Supplementary groups of exercises for developing snatch.
- 4.2 Supplementary groups of exercises for developing clean
- 4.3 Supplementary groups of exercises for developing jerk
- 4.4 Strength development exercises with weightlifting equipments

N.B:- The lifter will submit their training record book at the time of practical examination.

Evaluation criteria	Internal Assessment	External Assessment
Techniques of Snatch	20Marks	20Marks
Techniques of clean and Jerk	20 marks	20 marks
Supplementary exercises and performance	20 Marks	20 Marks
Record book and Viva	15 Marks	15 Marks
Total	75 Marks	75 Marks

SEMESTER – II

Course Code	Course Name	Credit	Teaching Hours	Internal Marks	External Marks	Total Marks
THEORY						
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/203H	Rules, Regulations and Interpretation: Weight Lifting	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
LAB PRACTICAL						
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	-	-	-
SPORTS PRACTICAL						
BSC/CCP/204H	General Conditioning and Performance – II: Weight Lifting	4	128	50	50	100
BSC/CCP/205H	Practical: Weight Lifting	6	192	75	75	150
TOTAL		25	608	275	350	625

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

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
- 2.2. The 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 Glassgow, 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: Weight Lifting

Course CODE: BSC/CC/203AH

Course Code	Course Name	Credit	Teaching Hours	Internal Marks	External Marks	Total Marks
BSC/CC/203H	Rules, Regulations and Interpretation: Weight Lifting	3	48	30	45	75

ESSENCE OF COURSE

This course will enable student to understand the techniques of snatch, clean and jerk. It aims to develop understanding about requisites of a weightlifting coach and players, Injuries and their precaution and Rehabilitations.

LEARNING OUTCOMES

After completing this course, the student will be able to

- Understanding techniques of snatch, clean and jerk o Understanding the requisites of weightlifting coach and players
- Knows the safety precaution and their management

UNIT- I

Fundamental Rules of Weightlifting- I

- 1.1 Age group, body weight categories, general lifts and incorrect movements (Snatch, Clean & Jerk)
- 1.2 Venue, equipments, platform, Scales and official documents, weigh-in, warming-up passes.
- 1.3 Ceremony (Opening, Closing), Victory Ceremony.
- 1.4 Terminology of Weightlifting.

UNIT- II

Fundamental Rules of Weightlifting- II

- 2.1 Athletes outfit: costume, footwear, belt, bandage, sticking plaster and tapes
- 2.2 Verification of final entries, Drawing of lot
- 2.3 Introduction of the lifter before the completion
- 2.4 Course of the competition, classification of lifter's and teams

UNIT- III

Technical Rules and Regulation-I

- 3.1 Technical officials: definition Jury, competition Director and Referees duties and responsibilities.
- 3.2 Technical Controller, Chief Marshal, Time keeper duties and responsibilities etc.
- 3.3 Competition Secretary, Speaker, doctors on duty, Loaders/decontamination attendants.
- 3.4 15-20kg rules, Video play back Technology.

UNIT- IV

Technical rules and regulation- II

- 4.1 Technical congress, calling order,
- 4.2 Proceeding of an IWF event.
- 4.3 Regulation(Referee light system, Jury control unit)
- 4.4 Competition systems including Olympic qualifying systems.

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*, 7th 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* (4th 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: Weight Lifting

COURSE CODE: BSC/CCP/204H

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

Course learning outcomes:

- Understand different strength test in weightlifting
- Understand specific warming up exercises according to skill of snatch and clean and jerk
- Organizing conditioning classes
- To know their personal best (Weightlifting performance)

UNIT-I

Different strength test in weightlifting

- 1.1 Strength- one rep max test
- 1.2 Dips test (Upper body strength and strength endurance)
- 1.3 Abdominal strength test (7 stage)
- 1.4 Back strength upper and lower (Kraus Webber)

UNIT-II

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

- 2.1 Specific warm-up exercises for Snatch.
- 2.2 Specific warm-up exercises for Clean.
- 2.3 Specific warming-up exercises for jerk
- 2.4 Specific warming-up exercises for speed and strength types of workouts.

UNIT-III

Organizing the conditioning classes.

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

UNIT-IV

Weightlifting performance.

4.1 Maximum Snatch.

4.2 Maximum Clean

4.3 Maximum Jerk

4.4 Total relative performance

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
Warming Up and cool down class Proficiency	10 Marks	10 Marks
Conditioning class proficiency	10 Marks	10 Marks
Total	50 Marks	50 Marks

Semester – II

PRACTICAL: Weight Lifting

Course Code: BSC/CCP/205H

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

Learning Outcomes:

- Understand Practical knowledge of officiating
- Understand Practical knowledge of technical officials
- Understand Practical knowledge of documentation (officiating)
- To know the fault correction of snatch and clean and jerk

UNIT-I

Practical knowledge of officiating in weightlifting.

- 1.1 Duties and responsibility of the referees.
- 1.2 Duties and responsibility of a chief marshal
- 1.3 Duties and responsibility of a time keeper
- 1.4 Duties and responsibility of a speaker.

UNIT-II

Practical experience of technical officials.

- 2.1 Competition Director
- 2.2 Technical Controller
- 2.3 Competition secretary.
- 2.4 Competition doctors and other staffs. Chief Marshal

UNIT-III

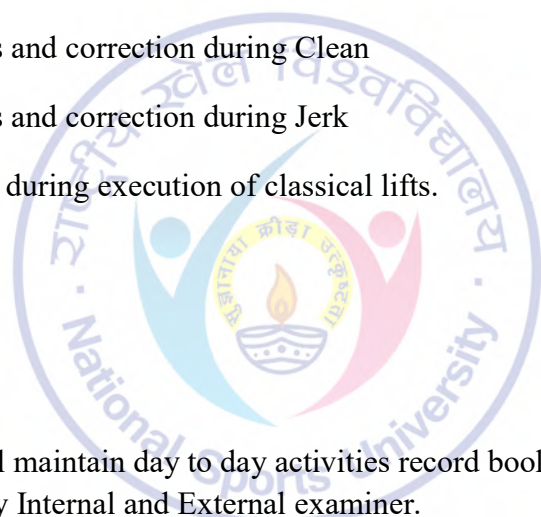
Practical knowledge of weightlifting official's documentation

- 3.1 Pre competition procedures- Entries
- 3.2 Verification of final entries
- 3.3 Drawing of lots and technical congress.
- 3.4 Athlete bibs, Athlete passes, Athlete warm-up passes, Challenge cards

UNIT-IV

Faults causes and its correction for two hands Snatch and Clean & Jerk

- 4.1 Faults, Causes and correction during Snatch
- 4.2 Faults, Causes and correction during Clean
- 4.3 Faults, Causes and correction during Jerk
- 4.4 Path of the bar during execution of classical lifts.



N.B: The weightlifters will maintain day to day activities record book (training load) of 2nd semester which will be verified by Internal and External examiner.

Evaluation Total Mark 150

Evaluation criteria	Internal Assessment	External Assessment
Officiating proficiency	20Marks	20Marks
Fault cause and correction of snatch	20 marks	20 marks
Fault cause and correction of clean and jerk	20 Marks	20 Marks
Record book and Viva	15 Marks	15 Marks
Total	75 Marks	75 Marks

SEMESTER– III

Course Code	Course Name	Credit	Teaching Hours	Internal Marks	External Marks	Total Marks
THEORY						
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/303H	Technique and Technical Development: Weight Lifting	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
LAB PRACTICAL						
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
SPORTS PRACTICAL						
BSC/CCP/304H	General Conditioning and Performance – III: Weight Lifting	4	128	50	50	100
BSC/CCP/305H	Practical: Weight Lifting	6	192	75	75	150
TOTAL		25	608	275	350	625

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
THEORY						
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
LABPRACTICAL						
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
THEORY						
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: Weight Lifting

COURSE CODE: BSC/CC/303H

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

ESSENCE OF COURSE

This course will enable student to understand the motor abilities. It aims to develop understanding about talent identification for weightlifters, organization and management of intramural competition

COURSE LEARNING OUTCOMES

After completing this course, the student will be able to

- Understanding the motor abilities
- Describe the talent identification and their development oDiscuss the organization and management
- Know about the management of intramural competition

UNIT- I

Techniques of snatch, clean and jerk.

- 1.1 Stages, Phases and Elements of Classical lifts.
- 1.2 Static and dynamic starting position of snatch and clean.
- 1.3 Involvement of Muscles and joints at different phases and elements of classical lifts.
- 1.4 Teaching and learning of rational weightlifting technique at different countries (Russia, Bulgaria, Cuba, Romania, China and India).

UNIT- II

Coaching skills related to Technical preparation.

- 2.1 Methods of training, their merits and demerits.
- 2.2 Methods of weightlifting training. (Loading procedures, volume, intensity repetitions, sets, average weight, average intensity, intensity co-efficient etc).
- 2.3 Methods of Power lifting and body building training.
- 2.4 Supplementary Exercises in Weightlifting to improve performance.(Snatch, Clean, Jerk and it's group of exercise)

UNIT- III

Motor abilities.

- 3.1 Bio motor abilities and the methodology of their development.
- 3.2 Mechanical, physiological characteristics of different motor parts.
- 3.3 Means and methods of developing the required abilities.
- 3.4 Means of an evaluation and analysis in relation to performance of weightlifters.

UNIT- IV

Teaching and Coaching Aids and their Technical development.

- 1.1.Coaching aids for weightlifters and their trends of the development.
- 1.2.Coaching aids for weightlifting coaches and their trends of the development.
- 1.3. Required teaching aids for weightlifting coaches and their trends of the development.
- 1.4. Improvisation of weightlifting equipments for training execution.

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.
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11. Singh, H. (1984). Sports training, general theory and methods. Patiala: NSNIS.
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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:

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12. <https://themanipurpage.tripod.com/culture/thangta.html>
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SEMESTER – III

GENERAL CONDITIONING AND PERFORMANCE – III: Weight Lifting

COURSE CODE: BSC/CCP/ 304H

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

Learning Outcomes:

- To understand different motor fitness test
- Designing various types of conditioning classes
- Performance development of semi classical lift
- Performance development and test of classical lift

UNIT-I

Motor fitness component test

- 1.1 Muscular test- Medicine ball put/ Bench press
- 1.2 Muscular endurance- Sit ups/ squat jump
- 1.3 Explosive strength- standing broad jump/ Vertical jump
- 1.4 Cardiovascular endurance- Harvard step test/ 12 min Cooper test.

UNIT-II

Designing of Conditioning class

- 2.1 Conditioning class design for increase power and Speed workouts.
- 2.2 Conditioning class design for Strength workouts.
- 2.3 Conditioning class design for Circuit training workouts.
- 2.4 Conditioning class design for Plyometric workouts.

UNIT-III

Semi classical lifts and performance development.

- 3.1 **Snatch**- Power Snatch, Power Snatch from different boxes (10, 20, 30, 40cm), Power Snatch from different position.
- 3.2 **Clean**- Power Clean, Power Clean from different boxes (10, 20, 30, 40cm), Power clean from different position.
- 3.3 **Jerk**- Jerk from rack, push jerk, back jerk, squat jerk, split jerk, vertical jerk, horizontal jerk
- 3.4 **Squat**- Different types of squat style.

UNIT-IV

Weightlifting performance test.

- 4.1 Maximum Snatch
- 4.2 Maximum Clean
- 4.3 Maximum Jerk
- 4.4 Total relative performance.

Evaluation criteria:BSC/CCP/304

Evaluation criteria	Internal Assessment	External Assessment
Physical Fitness test All the fitness components	15 Marks	15 Marks
Sports Performance	15 Marks	15 Marks
Performance of Semi classical lift	10 Marks	10 Marks
Conditioning class and test administration proficiency	10 Marks	10 Marks
Total	50 Marks	50 Marks



Semester – III

PRACTICAL: Weight Lifting

COURSE CODE: BSC/CCP/ 305H

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

Learning Outcome:

- To learn technique of classical lift and enhance teaching ability of snatch and clean and jerk
- To Learn techniques of master level
- Understand the technical preparation for weightlifting performance improving
- Understand different stages of Pull for snatch and clean and jerk

UNIT-I

Teaching ability of techniques of snatch, clean & jerk.

- 1.1 Start position, Pull to the hip, the explosion, the turnover, the catch
- 1.2 The Clean Technique: Start position, the initial pull, the explosion, the turnover, the catch, Recovery
- 1.3 The Jerk Technique: Start position, the dip, the drive, the split or squat, the catch and recovery
- 1.4 The Front Squat Technique: Front rack, breathing and bracing, the set-up, the descent, the ascent.

UNIT-II

Weightlifting techniques to master level

- 2.1 Technique test 1- Squat pattern
- 2.2 Technique test 2- Hip hinge pattern
- 2.3 Techniques test 3- Shoulder pack
- 2.4 Technique test 4- Neutral spine

UNIT-III

Technical preparation and weightlifting performance

- 3.1 The strength preparation phase of training
- 3.2 Strength endurance training (Relatively low intensity high training volume)
- 3.3 Strength preparation phase exercises (Single joint exercises, Multi joint free weight exercises)
- 3.4 Designing a preparatory strength phase workouts (Circuit style and Stage format)

UNIT-IV

Different Stages of 1st pull, 2nd pull and 3rd pull during execution of classical lifts

- 4.1 Stages of 1st, 2nd, 3rd pull during two hand Snatch
- 4.2 Stages of 1st, 2nd, 3rd pull during two hand Clean
- 4.3 Stages of Jerk in Split style and Squat style
- 4.4 Different pause Squat exercises.

Evaluation Total Mark 150

Evaluation criteria	Internal Assessment	External Assessment
Skill proficiency with technical aspects	20Marks	20Marks
Teaching ability of techniques	20 marks	20 marks
Different stages of Pull	20 Marks	20 Marks
Record book and Viva	15 Marks	15 Marks
Total	75 Marks	75 Marks

N.B: The weightlifters will maintain day to day activities record book (training load) of 3rd semester which will be verified by Internal and External examiner.

SEMESTER –IV

Course Code	Course Name	Credit	Teaching Hours	Internal Marks	External Marks	Total Marks
THEORY						
BSC/CC/401	Applied Sports Psychology	2	32	20	30	50
BSC/CC/402	Sports Medicine	3	48	30	45	75
BSC/CC/403H	Tactics , Strategies , and Tactical Development: Weight Lifting	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
LAB PRACTICAL						
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
SPORTS PRACTICAL						
BSC/CCP/404H	General Conditioning and Performance – IV: Weight Lifting	4	128	50	50	100
BSC/CCP/405H	Practical: Weight Lifting	6	192	75	75	150
TOTAL		25	608	275	350	625

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 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.
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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.
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4. Ellis and Henderson Running Injury Free Rodal Press (Pennsylvania) 1994
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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.
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9. Marcia K. Anderson and Malissa Martin Quick Reference Guide for Sports Injury Management Williams & Wilkins (London) 1998.
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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: Weight Lifting

COURSE CODE: BSC/CC/403AH

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

LEARNING OUTCOMES

After completing this course, the student will be able to

- Understanding the planning of weightlifter's training
- Understand about the coaching skills.
- Understand tactics and strategy of weightlifting
- Understand the regulation of body weight of weightlifters
- Preparing weightlifters for main competitions
- To understand tapering and diet management

UNIT- I

Tactics and strategy for weightlifters and coaches

- 1.1 Definition and classification of tactics and strategy.
- 1.2 Phases of teaching tactics.
- 1.3 Tactical movements during training, Pre-competition, during the competition and weight
- 1.4 Tactics for team championship and individual classification.

UNIT- II

Regulation of body weight for weightlifters

- 2.1.Means and methods for decreasing and increasing the body weight.
- 2.2.Scientific basis for identifying suitable weight category for better result over the competition.
- 2.3.Relation of body weight and performance of lifters.
- 2.4.Nutrition during pre-body weight weighs in, pre-competition, during the competition and post competition.

UNIT- III

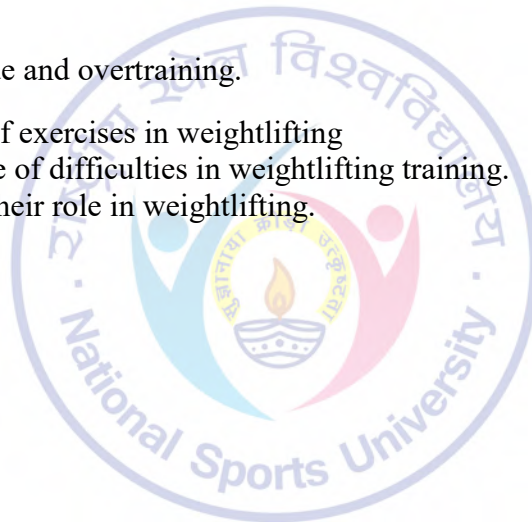
Preparation of the weightlifter's for main competition to perform their best.

- 3.1. Building the mind of a weightlifting champion.
- 3.2. Philosophical and theoretical issues relating to mental attitude.
- 3.3. Pre-contest phase:
 - 3.3.1. Understanding the primary conditions of the competition.
 - 3.3.2. Dietary consideration before the competition.
- 3.4. The actual competition:
 - 3.4.1. Determining the optimum number of warm up attempts and sets.
 - 3.4.2. Post-competition preparation.

UNIT- IV

Load tapering

- 4.1 Peaking method, Fatigue and overtraining.
- 4.2 The major methods of exercises in weightlifting
- 4.3 Application of degree of difficulties in weightlifting training.
- 4.4 Diet management and their role in weightlifting.



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.
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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.
3. Arthur S. Daniels & Euilya, “Adapted Physical Education”, Harpet& Row Publisher- New York.
4. Auxter, Byler, Howtting, “Adapted Physical Education and reactions” Morbey-St. Louis Missouri.
5. K. Park, “Preventive Social Medicine M/s BanaridasBhanot Publishers Prem Nagar Jabalpur. Ronald W. French, & Paul J., “Special Physical Education”, Charles E. Merrics Publishing Co.Edinburgh, Ohio.
6. Shekar KC, Adapted Physical Education(KhelSahitya Kendra: New Delhi)-2005
7. Winnick JP, Adapted Physical Education and sport Human Kinetics USA, 2005
8. Uppal, A. K. (1990). Physical fitness: how to develop. New Delhi: Friends Publication.

Semester – IV
GENERAL CONDITIONING AND PERFORMANCE – IV: Weight Lifting
COURSE CODE: BSC/CCP/404H

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

Learning outcomes:

- To understand and practically involved various test for weightlifters fitness development
- To understand and perform different conditioning exercises with equipments
- To understand the tactical development of weightlifting
- Maximum performance test

UNIT-I

Physical fitness test for weightlifters

- 1.1 Bleep shuttle run test
- 1.2 Margarita Kalamen power test
- 1.3 Batak reaction test
- 1.4 BMI (body mass index) test

UNIT-II

Development of conditioning exercises with equipments

- 2.1. Conditioning exercises with partners.
- 2.2. Conditioning exercise with medicine ball
- 2.3. Conditioning exercise with kettlebell and dome barbell.
- 2.4. Conditioning exercise with stairs and wall bars.

UNIT-III

Tactics and strategy in weightlifting training and performance

- 3.1. Counting of running scoreboard and applying of tactics to win.
- 3.2. Jumps between the attempt of 1st to 2nd lift and 2nd to 3rd lift.
- 3.3. Different body language, gesture and posture during training.
- 3.4. Execution of degree of difficulties.

UNIT-IV

Weightlifting performance test

- 4.1. 1 RM Snatch
- 4.2. 1 RM Clean and Jerk
- 4.3. 1RM Back Squat
- 4.4 .1 RM Deadlift.

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
Specific warming up Class and 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: Weight Lifting

COURSE CODE: BSC/CCP/405H

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

Learning Outcomes:

Understand tactical strategy involved in weightlifting training

Understand training load and recovery in weightlifting

UNIT-I

Introduction

- 1.1. Meaning and definition of tactics, strategies
- 1.2. Tactics in relation to technical efficiency, understanding and skill execution
- 1.3. Phases of Tactical action: Perception and analysis of competition situation, mental solution of the tactical task and Motor solution of the tactical task
- 1.4. Tactical training Preparation: Tactical knowledge, Tactical skill and tactical ability

UNIT-II

Tactics used in weightlifting

- 2.1. Tactical movement during training.
- 2.2. Tactic for team championship
- 2.3. Tactic in relation to 1st, 2nd, and 3rd attempt in classical lifts
- 2.4. Selection of poundage's for 1st, 2nd and 3rd attempts.

UNIT-III

Strategy used in weightlifting training.

- 3.1. Prioritize free weight compound exercises.
- 3.2. Do the four major movements (Push, Pull, Bend, Extend)
- 3.3. Superset non-competing exercises.
- 3.4. Seek progression, not perfection, Use variation to avoid stagnation.

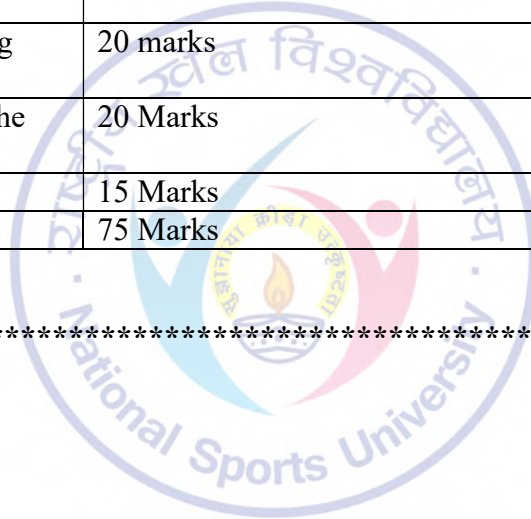
UNIT-IV

Judgment of training and competition load

- 4.1 Symptoms and causes of overload
- 4.2 Symptoms and causes of Fatigue
- 4.3 Psychological training during training and competition.
- 4.4 Load and super compensation.

Evaluation Total Mark 150

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



SEMESTER – V

Course Code	Course Name	Credit	Teaching Hours	Internal Marks	External Marks	Total Marks
THEORY						
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/02H	Specific Motor Qualities of Sports and Games: Weight Lifting	3	48	30	45	75
LAB PRACTICAL						
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)/02H	Specific Motor Qualities of Sports and Games: Weight Lifting	1	32	10	15	25
SPORTS PRACTICAL						
BSC/CCP/504H	Age Group Sports Training: Weight Lifting	4	128	50	50	100
BSC/CCP/505H	Practical: Weight Lifting	6	192	75	75	150
TOTAL		25	608	275	350	625

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

REFERENCES

1. Armstrong and Tucker, Injuries in sports (London: Staples press, 1964).
2. Christine, M. D., (1999). Physiology of sports and exercise. USA: Human Kinetics.
3. 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.
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.
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.
 8. Mathew, D. K. & Fox, E. L, (1971).Physiological basis of physical education and athletics.
 9. Philadelphia: W.B. Saunders Co.
 10. Pandey, P. K., (1987). Outline of sports medicine, New Delhi: J.P. Brothers Pub.
 11. Ray, Steven and Irvin Richard, Sports Medicine. (New Jersey: Englewood cliffa, Prentice Hall, 1983).
 12. 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
3. 2020.
4. Jeukendrup Asker, Sports Nutrition, Human Kinetics, 2018.
5. Karpinski Christina and A. Rosenbloom Christine, Sports Nutrition: A hand book of Professionals, Academy of Nutrition and Dietetics, 2017.
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7. Stull, G. A. and Cureton, T.K. Encyclopedia of Physical Education , Fitness and Sports- Training Environment , Nutrition and Fitness, Brighton Publishing Co. Saltlake City, 1980.
8. Wolliam D Mcardle, Sports , Exercise and Nutrition, LWW, 2019.

SEMESTER –V
RESEARCH METHOD AND STATISTICS IN SPORTS
COURSE CODE: BSC/CC/503

Course Code	Course Name	Credit	Teaching Hours	Internal Marks	External Marks	Total Marks
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

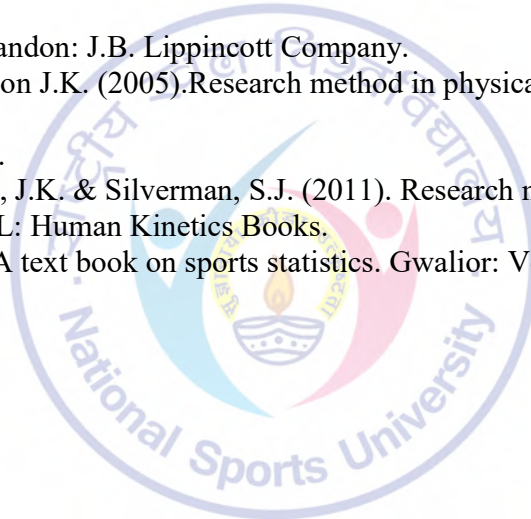
UNIT-IV

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.
5. Thomas, J.R., Nelson, J.K. & Silverman, S.J. (2011). Research method in physical activity. U.S.A: Champaign, IL: Human Kinetics Books.
6. U.S.A: Champaign, IL: Human Kinetics Books.
7. Verma, J. P. (2000). A text book on sports statistics. Gwalior: Venus Publications.



SEMESTER –V
SPORTS EVENT MANAGEMENT
COURSE CODE: BSC/DSC/01

Course Code	Course Name	Credit	Teaching Hours	Internal Marks	External Marks	Total Marks
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: Weight Lifting
COURSE CODE: BSC/DSC/02H

Course Code	Course Name	Credit	Teaching Hours	Internal Marks	External Marks	Total Marks
BSC/DSC/02H	Specific Motor Qualities of Sports and Games: Weight Lifting	3	48	30	45	75

ESSENCE OF COURSE

The course will enable the student about the motor abilities for weightlifting and organization of competition. Specific motor qualities exercises, Warming Up, Cooling Down and Training system to be use in weightlifting.

COURSE LEARNING OUTCOME:

After completing this course, the students will be able to

- Understand the motor abilities of weightlifting.
- Knowledge about motor abilities for weightlifters and organization of competition.
- Knowledge about semi classical exercise and muscles to be use in weightlifting.
- Understanding training system.

UNIT-I

Development of motor abilities for weightlifters on the ground and Organization of Competition

- 1.1.Motor abilities of weightlifters on the ground : Endurance, Speed, Strength and Coordinative abilities
- 1.2.Means & Methods of development motor abilities
- 1.3.Organization and Management of competition: weightlifting, Power lifting and Body building.
- 1.4.Terminologies used in weightlifting, power lifting.

UNIT-II

Development of specific motor qualities for top performance

- 2.1. Specific strength, power and flexibility and their importance in weightlifting.
- 2.2. Development of strength (Local muscles strength, strength speed, strength endurance, explosive strength)
- 2.3. Development of flexibility (Shoulder, hip, wrist, knees and ankle joint)
- 2.4. Development of neuromuscular co-ordination through different exercises.

UNIT-III

Means and methods to develop specific motor qualities:

- 3.1. Bio-motor abilities and the methodology of their development.
- 3.2. Mechanical, physiological characteristics of different motor parts.
- 3.3. Means and methods of developing the required abilities.
- 3.4. The major methods of exercises requirement for weightlifter's motor ability.

UNIT-IV

Training systems

- 4.1. Speed training. (Pull, push, squat)
- 4.2. Strength training. (Calisthenics, isometrics, plyometrics)
- 4.3. Strength endurance training. (Circuit training)
- 4.4. Flexibility training. (static, ballistic, PNF)



Semester – V

PRACTICAL

Specific Motor Qualities of Sports and Games: Weight Lifting

COURSE CODE: BSC/DSC(P)/02H

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

UNIT-I

- 1.1. Administration of strength test for weightlifter 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 Explosive strength test



Semester – V

AGE GROUP SPORTS TRAINING: Weight Lifting

COURSE CODE: BSC/CCP/504H

Course Code	Course Name	Credit	Teaching Hours	Internal Marks	External Marks	Total Marks
BSC/CCP/504 H	Age Group Sports Training: Weight Lifting	4	128	50	50	100

Learning Outcomes

- To understand talent identification in its methods.
- To understand systematization of sports training
- To develop motor fitness components
- To develop different training for Age Group

UNIT-I

Talent identification and Age group training

- 1.1.Methods and criteria used for weightlifting talent identification.
- 1.2.Procedure and phases of talent identification.
- 1.3.Various tests used for talent identification & their interpretation.
- 1.4.Sources of talent identification in India.

UNIT-II

Systematization of Sports Training Process

- 2.1.Basic skill development – Ages 11 year to 14 year
- 2.2.Basic Training Development – Ages 11 to 14

- 2.3 Progressive training – Ages 13 – 18
- 2.4 Avanced training-Ages 14 and over

UNIT-III

Fitness Components for Age Group weightlifters

- 3.1.Health related physical fitness of different age group
- 3.2.Skill related physical fitness different age group
- 3.3.Specific motor abilities for weightlifting in different age group
- 3.4.Coordinative abilities for weightlifters in different age group

UNIT-IV

Training for different age group of Masters weightlifters

- 4.1. Preparatory and competition period training
- 4.2. Short-term training plan
- 4.3. Yearly training plan
- 4.4. Pre, during and post competition preparation.

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
Talent identification	10 Marks	10 Marks
Psychological training and administration proficiency	10 Marks	10 Marks
Total	50 Marks	50 Marks



Semester – V

PRACTICAL: Weight Lifting

COURSE CODE: BSC/CCP/ 505H

Course Code	Course Name	Credit	Teaching Hours	Internal Marks	External Marks	Total Marks
BSC/CCP/505 H	Practical: Weight Lifting	6	192	75	75	150

Learning Outcomes

- To understand different training plan, methods and schedule for beginners.
- To understand different training plan, methods and schedule for 12 to 14 years weightlifters.
- To understand different training plan, methods and schedule for 16 to 18 years weightlifters.
- To understand different training plan, methods and schedule for 20 and above 20 years weightlifters.

UNIT-I

Weightlifting training for beginners and novices

- 1.1. Creating the training plan (1st year training plan)
- 1.2. The essence of planning.
- 1.3. Integrating long and short term planning.
- 1.4. The workout plan.

UNIT-II

Weightlifting training for 11 to 14 years weightlifters

- 2.1. Creating the training plan.
- 2.2. The essence of planning.
- 2.3. Integrating long and short term planning.
- 2.4. The workout plan.

UNIT-III

Weightlifting training for 14 to 18 years weightlifters

- 3.1. Creating the training plan.
- 3.2. The essence of planning.
- 3.3. Integrating long and short term planning.
- 3.4. The workout plan.

UNIT-IV

Weightlifting training for 20 to above 20 years weightlifters

- 4.1. Creating the training plan.
- 4.2. The essence of planning.
- 4.3. Integrating long and short term planning.
- 4.4. The workout plan.

Evaluation Total Mark 150

Evaluation criteria	Internal Assessment	External Assessment
Skill proficiency with technical aspects	20Marks	20Marks
National level training plan and schedule	20 marks	20 marks
Inter national level training plan and schedule	20 Marks	20 Marks
Record book and Viva	15 Marks	15 Marks
Total	75 Marks	75 Marks

SEMESTER –VI

Course Code	Course Name	Credit	Teaching Hours	Internal Marks	External Marks	Total Marks
THEORY						
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/04H	Tests, Measurements and Evaluation: Weight Lifting	2	32	20	30	50
LAB PRACTICAL						
BSC/CC(P)/601	Adventure Sports	1	32	10	15	25
BSC/DSC(P)/03H	Sports Pedagogy	1	32	10	15	25
BSC/DSC(P)/04H	Tests, Measurements and Evaluation: Weight Lifting	1	32	10	15	25
SPORTS PRACTICAL						
BSC/CCP/604H	Gender Based Sports Training: Weight Lifting	4	128	50	50	100
BSC/CCP/605H	Practical: Lifting	6	192	75	75	150
TOTAL		25	608	275	350	625

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

Course Code	Course Name	Credit	Teaching Hours	Internal Marks	External Marks	Total Marks
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

Course Code	Course Name	Credit	Teaching Hours	Internal Marks	External Marks	Total Marks
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)/ 03H

Course Code	Course Name	Credit	Teaching Hours	Internal Marks	External Marks	Total Marks
BSC/DSC(P)/03H	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

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
Lead up activities, dismissal part and Time Management	10 marks	10 marks
Total	50 Marks	50 Marks

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 Educational Technology*. 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: Weight Lifting
COURSE CODE: BSC/DSC/04H

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

ESSENCE OF COURSE

The course enables students to learn test and measurement. Selection and Construction of test and weightlifting performance ability test

COURSE LEARNING OUTCOME:

After completing this course, the students will be able to

- Knowledge about various test related to the game
- Understand the criteria of test selection.
- Knowledge about measurement of Physical performance.
- Understanding weightlifting performance ability test

UNIT-I

Introduction of 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 modifications 12 minutes cycling test (Coopers)
- 2.3 Harvard step test and its modifications (High School and college level (Men and Women)
- 2.4 Tuttle Pulse ratio test; Hyman's Cardio pulmonary Index (CPI)

UNIT-III

Various Types of Strength Test--Weightlifting performance ability test:

- 3.1 Kraus-Weber strength test
- 3.2 Roger's strength test
- 3.3 Phillip's J.C.R test
- 3.4 Core muscle and stability strength test.



TESTS, MEASUREMENTS AND EVALUATION: Weight Lifting
Course CODE: BSC/DSC(P)/04H

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

- 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. Bench Press (Maximum Weight)
- 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. Saunders Company.
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 Wiley 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: Weight Lifting
COURSE CODE: BSC/CCP/604H

Course Code	Course Name	Credit	Teaching Hours	Internal Marks	External Marks	Total Marks
BSC/CCP/604 H	Gender Based Sports Training: Weight Lifting	4	128	50	50	100

Learning Outcomes

- To understand difference between male and female weightlifters considering the training prospective.
- To understand female weightlifters fitness components.
- To understand effective training and intensity training zone.
- To understand the knowledge of women weightlifters training process and its development.

UNIT-I

Health and Historical background

- 1.1. Review of history and health records of female weightlifters.
- 1.2. Weightlifting and mature weightlifters.
- 1.3. Female athletes and weightlifting.
- 1.4. Making plan for the female athletes

UNIT-II

Female Weightlifters

- 2.1. Physical, Physiological difference between the men and women weightlifters for training prospects.
- 2.2. Psychological and social difference between the men and women weightlifters for training prospects.
- 2.3. Responsiveness to resistance training in women
- 2.4. Women weightlifting training at injury post injury a prolonged training gap.

UNIT-III

Fitness Components for women weightlifters

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

UNIT-IV

Training for Women weightlifter

- 4.1. Training differences between lower and upper category women weightlifters.
- 4.2. Women Weightlifters training schedule, volume and intensity at pre during and menstrual cycle.
- 4.3. Women weightlifters training at pre and during menstrual cycle.
- 4.4. Optimum women's weightlifting training in relation with training volume, intensity, exercises, Sequences of exercises, sets and repetition with effective training intensity training zone.

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	10 Marks	10 Marks
Psychological training and administration proficiency	10 Marks	10 Marks
Total	50 Marks	50 Marks

Semester – VI
Practical: Weight Lifting
COURSE CODE: BSC/CCP/605H

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

Learning Outcomes

- To understand motor ability test
- To understand specific fitness test and test administration.
- To learn weightlifting performance ability test

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

- 2.1. Strength endurance
- 2.2. Acceleration ability
- 2.3. Flexibility
- 2.4. Agility

UNIT--III

Weightlifting Specific Fitness Tests

- 3.1. Roger's strength test administration.
- 3.2. Phillip's J.C.R test administration (Boys and Girls)
- 3.3. Health-Carter method of Somato typing
- 3.4. BMI Calculation of different category weightlifters.

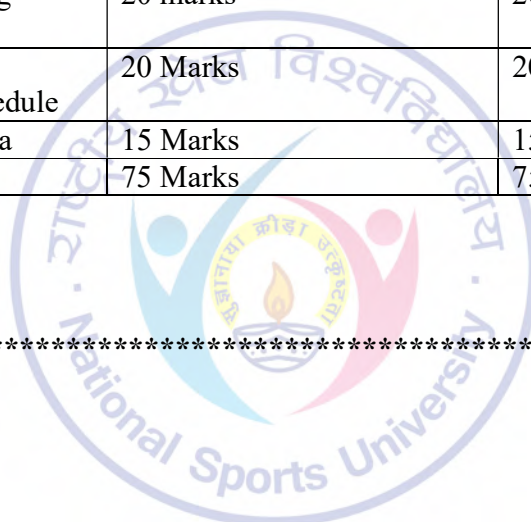
UNIT-IV

Weightlifting performance test:

- 4.1. Maximum Snatch.
- 4.2. Maximum Clean and jerk.
- 4.3. Maximum Back Squat.
- 4.4. Maximum dead lift.

Evaluation Total Mark 150

Evaluation criteria	Internal Assessment	External Assessment
Skill proficiency with technical aspects	20Marks	20Marks
National level training plan and schedule	20 marks	20 marks
Inter national level training plan and schedule	20 Marks	20 Marks
Record book and Viva	15 Marks	15 Marks
Total	75 Marks	75 Marks



SEMESTER – VII

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

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/701H

Course Code	Course Name	Credit	Teaching Hours	Internal Marks	External Marks	Total Marks
BSC/CC/701H	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)/701H

Course Code	Course Name	Credit	Teaching Hours	Internal Marks	External Marks	Total Marks
BSC/CC(P)/701H	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

Course Code	Course Name	Credit	Teaching Hours	Internal Marks	External Marks	Total Marks
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/702H

Course Code	Course Name	Credit	Teaching Hours	Internal Marks	External Marks	Total Marks
BSC/CCP/702H	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:

Sr. No.	Please evaluate this student intern on the following items:	Max. Marks
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
Total		150
INTERNAL ASSESMENT		50
TOTAL MARKS FOR INTERNSHIP		200

SEMESTER – VII

AGED PEOPLE SPORTS TRAINING: Weight Lifting

COURSE CODE: BSC/CCP/703H

Course Code	Course Name	Credit	Teaching Hours	Internal Marks	External Marks	Total Marks
BSC/CCP/703H	Aged People Sports Training: Weight Lifting	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 Aged People

UNIT-I

Selection of High Performance Weightlifters

- 1.1. Present weightlifting performance and their related subperformance of weightlifters.
- 1.2. Current classical performance and anticipated upcoming competition performance.
- 1.3. Rate of growth of classical and semi-classical performances.
- 1.4. Consistency of performance and stages of selection of elite weightlifters.

UNIT-II

Systematization of Sports Training Process

- 2.1. Basic weight training for aged people
- 2.2. Back and trunk exercises for elderly people
- 2.3. Lower body strengthen exercises for elderly people
- 2.4. Upper body strengthen exercises for elderly people

UNIT-III

Fitness Assessment basics for Aged people

- 3.1. Over head squat assessment
- 3.2. Balance assessment for aged people
- 3.3. Cardio consideration and Rockport walk test
- 3.4. Muscles strength and flexibility assessment
- 3.5. Optimum performance training model (OPT) for elderly people

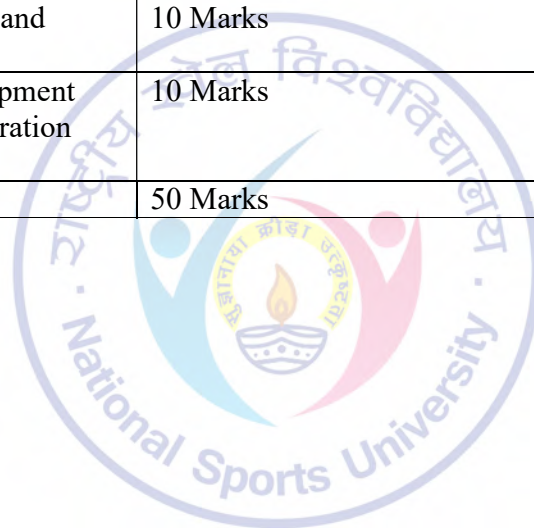
UNIT-IV

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 through core group development, pre safety precaution and optimum balance between motor factors training programme.
- 4.4. Supplementary exercises for motor quality development of aged weightlifters.

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
Training programme and schedule	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 – Weight Lifting

COURSE CODE: BSC/D/704H

Course Code	Course Name	Credit	Teaching Hours	Internal Marks	External Marks	Total Marks
BSC/D/704H	Dissertation: Research Proposal – Weight Lifting	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)



SEMESTER – VIII

Course Code	Course Name	Credit	Teaching Hours	Internal Marks	External Marks	Total Marks
THEORY						
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
PRACTICAL						
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
SPORTS PRACTICAL						
BSC/CCP/803H	Advance Coaching Lesson: Weight Lifting	6	192	75	75	150
BSC/CCP/804H	High Performance Sports Training: Weight Lifting	4	128	50	50	100
BSC/D/805H	Dissertation: Weight Lifting	7	112	75	100	175
TOTAL		25	592	280	345	625

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 (3rd 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
4. Maheshananda S, Sharma B.R, Sahay G.S. (2005). *VasisthaSamhita*. LonavallaKaivalyadhama Publication. ISBN:8189485377
5. Kuvalayananda S. (1993). *Asanas*. Lonavala,KaivalyadhamaPublication, India.
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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

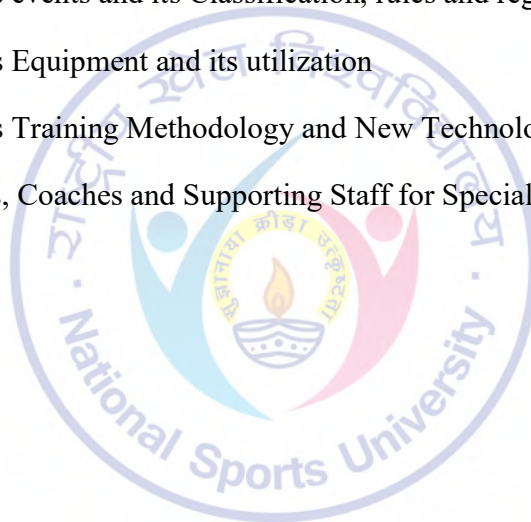
Paralympic Laws

- 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

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SEMESTER – VIII

ADVANCE COACHING LESSON: Weight Lifting

COURSE CODE: BSC/CCP/803H

Course Code	Course Name	Credit	Teaching Hours	Internal Marks	External Marks	Total Marks
BSC/CCP/803H	Advance Coaching Lesson: Weight Lifting	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
Total	50 Marks	50 Marks

SEMESTER – VIII
HIGHPERFORMANCE SPORTS TRAINING: Weight Lifting
COURSE CODE: BSC/CCP/804H

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

Learning Outcomes

- To understand High-Intensity Intermittent (HIIT) training methods.
- To understand advance weightlifting training methods.
- To understand the knowledge of scientific principles in training and coaching.
- To develop the skills in weightlifting.

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

Advance weightlifting training methods

2.1.Maximal effort method, Dynamic effort methods, Cluster sets, Drop set, Isometric training

2.2Antagonist super set methods, Giant set methods, down the rack methods, Prioritization

system, Conjugate system.

2.3 High altitude training for weightlifters

2.4Creating Proper Attitudes (Behavioral, Training Aims, Recovery and Diet)

UNIT-III

Principle of weightlifting training and coaching

- 3.1. Scientific principles of weightlifting (Specificity, overload, fatigue management, stimulus recovery adaption, variation, phase potentiation, individual differences).
- 3.2. Practical implement of laws of strength training.
- 3.3. Develop core strength, develop stabilizers muscles.
- 3.4. Development of ligament and tendon strength.

UNIT-IV

Weightlifting performance for masters category lifters.

- 4.1. 1RM Snatch.
- 4.2. 1 RM clean and jerk.
- 4.3. 1 RM back squat.
- 4.4. 1 RM bench press
- 4.5. 1 RM dead lift.

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
Advance Training programme and schedule	10 Marks	10 Marks
High-intensity intermittent exercise (HIIT) training systems and administration proficiency	10 Marks	10 Marks
Total	50 Marks	50 Marks

SEMESTER – VIII

DISSERTATION: Weight Lifting

COURSE CODE: BSC/D/805H

Course Code	Course Name	Credit	Teaching Hours	Internal Marks	External Marks	Total Marks
BSC/D/805H	Dissertation: Weight Lifting	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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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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