

(Abstract)

FYIMP in Physical Education and Sports offered by School of Physical Education and Sports Sciences, Mangattuparamba Campus - Scheme & Syllabus -Approved and Implemented w.e.f. the academic year 2024-25 - Orders issued

ACADEMIC C SECTION

ACAD C/ACAD C1/17713/2024

Dated: 06.09.2024

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- Read:-1. U O No. Acad C3/22488/2023 dtd 15.03.2024
2. U O No. Acad H/Acad H3/4513/2024 dated 15.05.2024
3. Minutes of the meeting of the FYIMP implementation Committee held on 01/04/2024
4. U O No. Acad C/Acad C3/7453/2024 dated 15.06.2024
5. Minutes of the FYIMP Scrutiny Committee held on 18.06.2024
6. E mails received from the Heads/ Course Director of FYIMP offering Depts.
7. The Minutes of the meeting of the Academic Council held on 25.06.2024

ORDER

1. As per the paper read (1) above, the Regulations for the Five Year Integrated Master's Programme (FYIMP) in University Teaching Departments / Schools were implemented w. e. f the academic year 2024-25.
2. Accordingly, Five Year Integrated Master's Programme (FYIMP) viz, Physical Science, Computational Science, Clinical Psychology, Anthropological Sciences were commenced at various Campuses of Kannur University during the academic year 2024-25. Further the ongoing Five Year Integrated Master of Physical Education and Sports and Five Year Integrated M.Com. Programme, come under the FYIMP pattern w. e. f the academic year 2024-25.
3. As per paper read (3) above, the meeting of the FYIMP Implementation Committee suggested the Heads/Course Directors of the Teaching Depts concerned to conduct one day Workshop for finalizing the Syllabus of the FYIMP and to submit the same to the University for approval.
4. Heads/ Course Directors submitted the syllabi accordingly.
5. Later on, as per the paper read as (4) above, an FYIMP Scrutiny Committee was constituted to scrutinize the Syllabi submitted by the Heads/ Course Directors of the FYIMP offering Departments.
6. The FYIMP Scrutiny Committee, scrutinized the FYIMP Syllabi submitted by the Heads/ Course Directors concerned. The FYIMP offering Heads/ Course Directors were informed to submit the final Draft of the Syllabi, after incorporating the Modifications/ Corrections suggested by the FYIMP Scrutiny Committee, along with the Minutes of the Department council, approving the syllabus.
7. As per paper read (6) above, the Heads of the Depts/Course Directors, offering FYIMP submitted the final Draft Syllabi, seeking approval.

8. The same was placed before the meeting of the Academic Council held on 25/06/2024, for consideration.

9. Subsequently, the XXVIII meeting of the Academic Council, vide item III (12), as per paper read as (7) above, approved the Syllabus of the FYIMP in Physical Education and Sports along with other five FYIMPs, to be commenced at various Campuses of the University w.e.f. 2024-'25 academic year, in principle and permitted to publish the same.

10. The Minutes of the Academic Council was approved by the Vice Chancellor and published.

11. Therefore, the approved Syllabus of FYIMP in Physical Education and Sports offered by School of Physical Education and Sports Sciences, Mangattuparamba Campus is attached with this U.O. and uploaded in the website of the University (www.kannuruniv.ac.in).

Orders are issued accordingly.

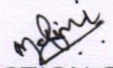
Sd/-

ANIL CHANDRAN R
DEPUTY REGISTRAR (ACADEMIC)
For REGISTRAR

To: 1. Head, School of Physical Education & Sports Sciences
2. Nodal Officer, FYIMP

Copy To: 1. PS to VC, PA to R, PA to CE
2. JR (Exam)
3. EP IV/EG I/EXC I (Exam)
4. IT Cell (to publish in the website)
5. Computer Programmer
6. SF/DF/FC

Forwarded / By Order


SECTION OFFICER



KANNUR UNIVERSITY



**FIVE-YEAR INTEGRATED MASTER OF PHYSICAL EDUCATION AND
SPORTS PROGRAMME (IMPES)**

SCHEME AND SYLLABUS

(Under Choice Based Credit Semester System)

**Based on Kannur University Five-Year Integrated Programme
Regulations**

2024-25 Academic Session Onwards

**(Also applicable for the Five-Year Integrated Master of Physical
Education and Sports Programme commenced from 2023-24 to
migrate to the new curriculum framework)**

**SCHOOL OF PHYSICAL EDUCATION AND SPORTS SCIENCES
MANGATTUPARAMBA CAMPUS
KANNUR UNIVERSITY**

PREFACE

The five-year integrated programme in Physical Education and Sports programme (Five Year Master of Physical Education and Sports) integrates undergraduate programme (BPES degree / BPES honours / honours with research) with the post graduate programme (MPES), offering multidisciplinary and interdisciplinary approach to diverse areas of specialisation in the field. The programme stipulated as per the curriculum framework as suggested by UGC and recommended by the Kerala State Higher Education Council, stipulates to the recommendations of providing the restructured curriculum with multiple entry and exit, flexible option and pathways for students for major / minor, and providing more employability skills in the current scenario.

The curriculum covers foundational courses in physical education and sports at the initial semesters, therewith providing diverse options of flexibility for students to specialised areas in physical education and sports including interdisciplinary areas encompassing psychology, statistics, information technology and computer science. More advanced interdisciplinary courses catering to employable skills in the sports industry would be incorporated in further revisions from time to time. The curriculum and syllabus have been redesigned in reducing the knowledge- skill gap; possibility for advanced internships; research projects in major areas of focus in the field, leading to better employability of the graduates.

The programme has been designed to provide a comprehensive framework that encompasses various aspects of physical education and sports, including theoretical knowledge, practical skills, and real-world application. Through a blend of classroom learning, practical training, and hands-on experiences, internships, students will not only develop proficiency in different sports disciplines but also gain a deep understanding and proficiency in the application of sports sciences for health, wellbeing and performance enhancement. Moreover, the curriculum integrating courses from other related disciplines recognizes the interconnectedness of physical education with other academic disciplines, promoting cross-curricular and interdisciplinary learning, fostering a holistic understanding of human development.

The programme, which is unique and one of the first in the country, represents a significant milestone in the pursuit of knowledge and expertise in this dynamic and multifaceted discipline. Beyond the realm of mere physical activity and training, the programme encompasses a spectrum of disciplines, from exercise science and biomechanics to sports psychology, coaching methodologies and sports analytics to provide a comprehensive and in-depth exploration of these areas, equipping students with the skills, knowledge, and competencies needed to excel in diverse professional settings.



Anil Ramachandran
Professor and Head
School of Physical Education and Sports Sciences
Kannur University

Members of the Curriculum and Syllabus Revision Committee

- Chairperson : Dr Anil Ramachandran
Professor & Dean, Head, School of Physical Education and Sports Sciences, Kannur University
- Members : Dr Wilson V A
Associate Professor, School of Physical Education and Sports Sciences, Kannur University
- Dr Suvarna Sankar P S
Assistant Professor, School of Physical Education and Sports Sciences, Kannur University
- Dr Shijila P S
Assistant Professor, School of Physical Education and Sports Sciences, Kannur University
- Dr Ummer Farook
Assistant Professor, School of Physical Education and Sports Sciences, Kannur University
- External Experts : Prof Nishan Singh Deol
Professor, Department of Physical Education
Punjabi University, Patiala
- : Dr Biju Kumar K
Professor in Physical Education
Mahatma Gandhi College, Thiruvananthapuram

Programme: **FIVE-YEAR INTEGRATED MASTER OF PHYSICAL EDUCATION AND SPORTS**

Multiple Entry – Exit (Credits as per Kannur University Regulations of Five-year Integrated Programmes)

- **Exit at Three year – Qualifying for a Degree**
 - Three-year Degree BPES – Major in Physical Education and Sports (Single major)
 - Three-year Degree – Major in Physical Education and Sports (Minor in other disciplines – Psychology / Information Technology and Computer Science / Statistics)
- **Exit at Fourth Year – Degree with Honours / Honours with Research**
 - Four Year Degree (Honours) – Major in Physical Education and Sports (Single major)
 - Four Year Degree (Honours) – Major in Physical Education and Sports (Minor in other disciplines – Psychology / Information Technology and Computer Science / Statistics)
- **Exit at Fifth Year – Master of Physical Education and Sports**

Duration : 5 years (10 semesters).

Intake : Thirty students in one unit each year

Eligibility : Eligibility for admissions and reservation of seats for Integrated Master of Physical Education and Sports Programme (CBCSS) shall be as per the rules framed by the University/ UGC from time to time.

- No student shall be eligible for admission to the Programme unless they have successfully completed the Higher Secondary Examination of the State, or an Examination accepted by the University as equivalent thereto.
- Age of the candidate should be below 23 years as on June 1 of the admission year.
- Relaxation of marks and age limit; and reservation for eligible categories will be given in qualifying examinations as per rules of Kannur University/Govt. of Kerala for admission.
- Candidates should possess physical fitness to undertake the practical courses and load of physical exercise as part of the programme.
- Admission taken in the first semester shall be admission to "M.P.E.S. (Five Year Integrated) Programme" (CBCSS) (and students will not be required to take re- admission at any stage of the course unless the student exit at the different exit options.
- The selection of students for admission will be done as per the merit list prepared based on the admission tests (written test, physical test and game proficiency assessment) based on the rules/regulations as laid down by Kannur

University from time to time.

- B.P.E.S and M.P.E.S degrees awarded as per regulation of **(Five Year Integrated Master of Physical Education and Sports Programme (CBCSS))** shall be equivalent to the B.P.E.S and M.P.E.S. Degree for academic and employment purposes.
- If any vacancy arises due to discontinuation or exit option after VI Semester or VIII semester, fresh admission shall be allowed to VII semester, for candidates with Degree in B.P.E.S or B.P.Ed, as per University PG Department Admission regulations.

Admission Criteria : Admission to the programme will be based on merit list based on the cumulative marks based on the following tests / criteria.

- | | | |
|---|---|----------|
| A. Written test | : | 50 Marks |
| B. Game Proficiency | : | 20 Marks |
| C. Physical fitness test (AAHPERD test) | : | 20 Marks |
| a. 50-yard dash | | |
| b. 4 x 10-yard shuttle run | | |
| c. sit-ups | | |
| d. Pull ups (flexed arm hang for girls) | | |
| e. Standing broad jump | | |
| f. 600-yard run walk test | | |
| D. Sports Achievement | : | 10 Marks |

Total 100 Marks:

Candidates should score at least 40% in the selection tests to be placed in the rank list.

Programme Outcomes (POs):

Program Outcomes (POs) serve as a foundational framework defining the skills, knowledge, and attributes that students of Kannur University are expected to acquire upon completion of a specific academic program. Tailored to the unique goals of each program, POs articulate the overarching learning objectives that guide curriculum design and assessment. These outcomes encompass a diverse range of competencies, including critical thinking, problem-solving, effective communication, and discipline-specific expertise. POs play a crucial role in shaping educational experiences, ensuring alignment with academic standards and industry expectations. By articulating clear and measurable expectations, POs contribute to the continuous improvement of academic programs and provide a roadmap for students to develop into well-rounded, competent professionals within their chosen fields.

PO1: Critical Thinking and Problem-Solving-Apply critical thinking skills to analyze information and develop effective problem-solving strategies for tackling complex challenges.

PO2: Effective Communication and Social Interaction-Proficiently express ideas and engage in collaborative practices, fostering effective interpersonal connections.

PO3: Holistic Understanding-Demonstrate a multidisciplinary approach by integrating knowledge across various domains for a comprehensive understanding of complex issues.

PO4: Citizenship and Leadership-Exhibit a sense of responsibility, actively contribute to the community, and showcase leadership qualities to shape a just and inclusive society.

PO5: Global Perspective-Develop a broad awareness of global issues and an understanding of diverse perspectives, preparing for active participation in a globalized world.

PO6: Ethics, Integrity and Environmental Sustainability-Uphold high ethical standards in academic and professional endeavors, demonstrating integrity and ethical decision-making. Also acquire an understanding of environmental issues and sustainable practices, promoting responsibility towards ecological well-being.

PO7: Lifelong Learning and Adaptability-Cultivate a commitment to continuous self-directed learning, adapting to evolving challenges, and acquiring knowledge throughout life.

Programme Specific Outcomes:

PSO 1: Contextualize physical education and sports with a set of attitudes and values that signify the importance of movement as a valued human practice and enable to make positive contributions to the enhancement of society.

PSO 2: Develop professional competency embedded with ethical principles to qualify for work force as teacher / coach / expert / mentor in various academic institutions, professional sports organisations, fitness industry and sports science/ health and fitness sectors.

PSO 3: Transform themselves into competent and professional experts with domain knowledge and effective communication and pedagogical skills.

PSO 4: Promote learning new skills, enhance, extend, inform and critique the deliberate use of exercise, play, sport and other forms of physical activity within the individual and societal context.

PSO 5: Acquire organizational, management and leadership skills necessary in diverse sports settings and in general multidisciplinary educational context.

PSO 6: Apply appropriate techniques, resources and modern tools for developing innovative and research-based interventions and strategies for professional development in the interdisciplinary and multidisciplinary context.

Credit Structure

TOTAL CREDITS FOR SIX SEMESTERS (THREE YEAR EXIT) = 133

COURSES	CREDITS	Semesters
Major / Minor Stream (DSC /DSE)	96 (4 credit courses)	Within all six semesters
Multidisciplinary Courses (MDC)	9 (3 credit three courses)	1 to 4
Skill Enhancement Courses (SEC)	9 (3 credits three courses)	1 to 6
Value Added Courses (VAC)	6 (3 credits two courses)	1 to 4
Ability Enhancement Courses (AEC)	9 (3 Credits three courses)	1 and 2
Internship / Field Visit	4 (either one 4C internship or two 2C internships)	3 to 6
Total credits for first six semesters	133	

TOTAL CREDITS FOR SEMESTERS 7 and 8 = 44

(For Exit with UG Honours/Honours with Research the total credit =177)

COURSES	CREDITS	Semesters
Major / Minor Stream (DSC /DSE)	24 (4 credit 6 courses)	7
Additional DSC / DSE for Honours (in Major discipline)	12 (2 DSC and 1 DSE in the Major)	8
Project	12 Credits	8
MOOC / ONLINE COURSES (Blended Mode)	8 (4 credits 2 courses)	7 and 8
Total credits for Semester 7 and 8	44*	

*For Honours with Research 12 credits Project in Semester 8 and for Honours additional 12 credits DSC / DSE in Semester 8 which should include Capstone level courses

TOTAL CREDITS FOR SEMESTERS 9 and 10 = 40

(For Exit with PG under FYIMP the total credit =217)

COURSES	CREDITS	Semesters
Major Stream	20 Credits (Course / Project)	9
Major Stream	20 Credits (Course / Project)	10
Total credits for Semester 9 and 10	40	

PROGRAMME STRUCTURE- FIVE YEAR INTEGRATED MASTER OF PHYSICAL EDUCATION AND SPORTS PROGRAMME

Distribution of Credits, Hours and Weightage ratio								
Course code	Category	Course title	Credit	Total credit required for the semester	Total hours	Weightage ratio		
						CE	ESE	T
SEMESTER I								
KU1DSCPES101	DSC (A1)	Fundamentals of Human Anatomy	4	21	60	50	50	100
	DSC (B1)	To be taken from another department	4		60	50	50	100
	DSC (C1)	To be taken from another department	4		60	50	50	100
	MDC	To be taken from another department	3		45	50	50	100
KU1AECPE101	AEC	From basket of Courses	3		45	50	50	100
KU1AECPE102	AEC	From basket of Courses	3		45	50	50	100
		Major Games-(T & F and Football)	Non Credit					
SEMESTER 2								
KU2DSCPES102	DSC (A2)	Foundation of Physical Education and Sports Sciences	4	22	60	50	50	100
KU2DSCPES103	DSC (A3)	Major Games – Badminton & Volleyball	4		60	50	50	100
	DSC (B2/C2)	To be taken from another department	4		60	50	50	100
	DSC (B3/C3)	To be taken from another department	4		60	50	50	100
	MDC	To be taken from another department	3		45	50	50	100
	AEC	Malayalam/Hindi/OL/Foreign Language (To be taken from basket of courses)	3		45	50	50	100
		Major Games – Yoga	Non Credit					
SEMESTER 3								
KU3DSCPES201	DSC	Science of Human Movement	4	22	60	50	50	100
KU3DSCPES202	DSC	Tests, Measurements and Evaluation in Physical Education and Sports	4		60	50	50	100
KU3DSCPES203	DSC	Health Science Education	4		60	50	50	100
KU3DSCPES204	DSC	Major Game – Kho-Kho/Kabaddi	4		60	50	50	100
	MDC	Kerala Studies	3		45	50	50	100
	VAC	From Basket of Courses	3		45	50	50	100
SEMESTER 4								
KU4DSCPES205	DSC	Kinesiology and sports biomechanics	4	22	60	50	50	100
KU4DSCPES206	DSC	Emerging Trends in Sports Management	4		60	50	50	100
KU4DSCPES207	DSC	Yogic Science for Wellness	4		60	50	50	100
KU4DSCPES208	DSC	Major Game – Softball and Cricket	4		60	50	50	100
	SEC-1	From Basket of Courses	3		45	50	50	100
	VAC	From Basket of Courses	3		45	50	50	100

SEMESTER 5								
KU5DSCPES301	DSC	Exercise Psychology	4	23	60	50	50	100
KU5DSCPES302	DSC	Theory and Methodology of Sports Training	4		60	50	50	100
KU5DSCPES303	DSC	Major Game – Track and Field – Stage 2	4		60	50	50	100
KU5DSCPES304	DSC	Major game – Football – Stage 2	4		60	50	50	100
Discipline Specific Electives								
KU5DSEPES301	DSE (1)	Gender in Sport and Physical Activity	4		60	50	50	100
KU5DSEPES302		Ethics and Integrity in Sports			60	50	50	100
KU5DSEPES303		Sociology of Sport			60	50	50	100
	SEC-2	From Basket of Courses	3		45	50	50	100
SEMESTER 6								
KU6DSCPES305	DSC	Sports Nutrition – Theory and Practice	4	23	60	50	50	100
KU6DSCPES306	DSC	Sports Psychology	4		60	50	50	100
KU6DSCPES307	DSC	Major Game – Swimming	4		60	50	50	100
Discipline Specific Electives								
KU6DSEPES304	DSE (1)	Injury Prevention and Rehabilitation	4		60	50	50	100
KU6DSEPES305		Sports Entrepreneurship			60	50	50	100
KU6DSEPES306		Sports Journalism			60	50	50	100
KU6DSEPES307		Sports Law			60	50	50	100
KU6DSEPES308		Geriatric Health and Fitness			60	50	50	100
KU6INTPES301	INT-1	Internship/Field Visit (Can be completed within semesters 3 to 6)	4		60	50	50	100
	SEC-3	From Basket of Courses	3	45	50	50	100	
EXIT AFTER 3RD YEAR - UG DEGREE MAJOR/MINOR WITH MINIMUM 133 CREDITS								
SEMESTER 7								
KU7DSCPES401	DSC(3/4)	Research Methods in Physical Education and Sports	4	24	60	50	50	100
KU7DSCPES402		Statistical Applications in Physical Education and Sport			60	50	50	100
KU7DSCPES403		Ethics, Academic Integrity and Research Writing			60	50	50	100
KU7DSCPES404		Specialization (Sport – Opted in three years)			60	50	50	100
KU7INTPES401	INT-2	Project / Internship	4					
Discipline Specific Electives								
KU7DSEPES401	DSE(1/2)	Biomechanics in Sports	4	60	50	50	100	
KU7DSEPES402		Advanced Exercise Physiology		60	50	50	100	
KU7DSEPES403		Sports Nutrition and Training Adaptation		60	50	50	100	
KU7DSCPES404		Science of Coaching		60	50	50	100	
	DSC (MOOC/ ONLINE)	Selected from the list of courses from the approved platforms/institutional LMS)	4	60	50	50	100	
NOTE: 5 courses with 2 DSC from A,1 DSE From A and a choice of DSC or DSE from A/B/C-including specialized capstone courses								

SEMESTER 8								
KU8DSCPES405	DSC	Dissertation (12 Credits for Honors with Research)*	12					
Discipline Specific Electives								
KU7(8)DSEPES401*	DSE (1) 3 for those who don't opt Honours with Research)**	Biomechanics in Sports	4	20	60	50	50	100
KU7(8)DSEPES402*		Advanced Exercise Physiology			60	50	50	100
KU7(8)DSEPES403*		Sports Nutrition and Training Adaptation			60	50	50	100
KU7(8)DSSPES404*		Science of Coaching (Capstone Signature Course)			60	50	50	100
	DSC-2 (MOOC/ ONLINE)	Selected from the list of approved platforms/institutional LMS)	4		60	50	50	100
*Students does who have not opted honours with research can take DSE courses from Semester 7								
**For honours with research, the details of undertaking the project will be as per the guidelines as suggested by the university for the FYIMP.								
EXIT AFTER 4TH YEAR – DEGREE WITH HONOURS/HONOURS WITH RESEARCH WITH MINIMUM 177 CREDIT								
SEMESTER 9								
KU9DSCPES501	DSC	Advanced Periodisation and Programme Designing	4	20	60	50	50	100
KU9DSCPES502	DSC	Recovery Science and Peak Performance			60	50	50	100
KU9DSCPES503	DSC	Advanced Sports Analytics (IDC Course)			60	50	50	100
KU9DSCPES504	DSC	Coaching Expertise in Specialized Sport (Based on Specialized Course opted at 400 level)			60	50	50	100
KU9DSSPES501	DSS	Psychological Skills Training Signature Course)			60	50	50	100
KU9RPHPE501		Research	20/40*					
SEMESTER 10								
KU10DSCPES505	DSC(5)	Biomechanical Analysis in Sports	4	20	60	50	50	100
KU10DSCPES506		Sports Technology			60	50	50	100
KU10DSCPES507		Performance Analysis in Sports			60	50	50	100
KU10DSCPES508		Inclusive Physical Activity and Sports for Special Population			60	50	50	100
KU10DSCPES509		Counselling in Sports Psychology (IDC)			60	50	50	100
KU10DSSPES502		Load Monitoring and Training (Capstone-Signature Course)			60	50	50	100
KU9RPHPE502		Research	20/40*					
*For dissertation / project for the fifth year the credit for different pathways will be as per the common guidelines suggested by the university.								
EXIT AFTER 5TH YEAR – FIVE YEAR INTEGRATED MASTER OF PHYSICAL EDUCATION AND SPORTS WITH MINIMUM 217 CREDITS								

SEMESTER I

KU1DSCPES101: FOUNDATIONS OF HUMAN ANATOMY

Semester	Course Type	Course Level	Course Code	Credits	Total Hours
1	DSC	100	KU1DSCPES102	4	60

Learning Approach (Hours/ Week)			Marks Distribution			Duration of ESE (Hours)
Lecture	Practical/ Internship	Tutorial	CE	ESE	Total	
60	-	60	50	50	100	2 hrs.

Course Description

This course will enable students to understand the structural and functional aspects of the human body. It aims to develop an understanding of the organization of the human body and its regulations, their support and movements, integration, and control systems.

COURSE OUTCOMES

After the completion of the course, the students will be able to

CO No.	Expected Outcome	Learning Domains
CO1	Demonstrate a comprehensive understanding of the basic concepts, terminology, and principles of human anatomy	U
CO2	Understand and recognize the anatomical structures and their functions, relevant to physical movements and performance.	U,A, An
CO3	Understand the structure and function of cardiovascular, respiratory, and digestive systems	U
CO4	Develop comprehensive knowledge of the nervous system, excretory system, and endocrine system and their role in maintaining homeostasis	R, U, An

***Remember(R), Understand(U), Apply(A), Analyze (An), Evaluate (E), Create(C), and Synthesis (Sy)**

Mapping of Course Outcomes to PSOs						
	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	✓	✓	✓	✓		
CO2	✓	✓	✓		✓	
CO3	✓	✓	✓	✓		
CO4	✓	✓	✓		✓	

Module-1: Introduction to Anatomy

Hours of transaction:10

1.1 Basic concepts in anatomy

- Definition, Scope, and role of anatomy in understanding human movement and physical performance.
- Introduction to fundamental anatomical terms.
- Application of terminology in describing body structures.

1.2 Levels of Structural Organization

- Introduction to the structural organization of the human body.
- Molecular Organization of the body: Understanding the role of biomolecules in cellular function.
- Cellular and tissue level organization: Structure and functions of cell organelles (Plasma membrane, cytoplasm, Endoplasmic, Reticulum, ribosomes, Golgi Apparatus, Lysosomes, Mitochondria, Nucleus and cell inclusions)

1.3 Tissue-level organization

- Tissues – Definition, Classification, structure, and functions of each type.
- Structure and function of epithelial, connective, muscle, and nervous tissues.

Suggested reading specific to the Module

1.1 Davidson, D.S.& Morgan. (2002) *Human body revealed. Great Britain, Dorling*

1.2 Kindersley Bruce M. Carlson (2014) - *The Human Body – Elsevier/Saunders*

1.3 Guy Orchard & Brian Nation (2015) - *Cell structure and function – OUP Oxford*

Module 2: Musculoskeletal System

Hours of transaction:10

2.1 Skeletal system

- General Organization and functions of the skeletal system
- Gross anatomy and Classification of bones.
- Axial and Appendicular Skelton: Description and location of the following bones. (Scapula, Humerus, Radius, Ulna, Hip bone, Femur, Tibia, Fibula, Typical Vertebra, Skull bones & Rib)

Syllabus – Five-Year Integrated Master of Physical Education and Sports.

2.2 Joints

- Meaning and classification of joints
- Structural classification (Fibrous, Cartilaginous, Synovial) and functional classification (Synarthrosis, Amphiarthrosis, and Diarthrosis)
- Gross anatomy of knee joint, elbow joint, shoulder joint, hip joint, ankle joint and wrist joint

2.3 Muscular system

- Characteristics and functions of skeletal muscle
- Types and functions of muscles- Voluntary, involuntary, and Cardiac muscle
- Organization of skeletal muscle: fascicle, muscle Fiber, myofibrils, and sarcomere
- Types of muscle fibers (fast twitch and slow twitch)

Suggested reading specific to the Module

2.1 Mc Ardle, W.D.; Katch, F.I. & Katch, V.L. (2010) *Exercise physiology- Nutrition, Energy, and human performance. 7th edition. Philadelphia, Wolters Kluwer and Lippincott Williams & Wilkins.*

2.2 Bruce M. Carlson (2014) - *The Human Body – Elsevier/Saunders*

2.3 Whiting W.C., & Rugg, S. (2006). *Dynatomy: dynamic human anatomy. Champaign, IL, Human Kinetics.*

Module 3: Cardiorespiratory and Digestive System Hours of transaction: 15

3.1 Cardiovascular system

- Organs in the circulatory system.
- Constituents of blood
- Structure and functioning of the heart.
- Cardiac Cycle & Type of Circulation (Systemic, Cardiac and pulmonary)

3.2 Organs in the respiratory system.

- Structure of the lungs. Basic structure of the respiratory system.
- Mechanism of breathing, inhalation, and exhalation processes.
- Role of the diaphragm and intercostal muscles.
- Understanding the alveolar structure. Gas Exchange in the Alveoli

3.3 Digestive system

- Organs in the digestive system.
- Structure of stomach, small intestine, and large intestine.
- Understanding the role of accessory organs: liver, gallbladder, pancreas.

Suggested reading specific to the Module

3.1 Manocchia. P. (2007) *Anatomy of Exercise-A trainers inside guide to your workout. New York, A&C Black.*

3.2 J. Gordon Betts Et.al. (2013) - *Anatomy and Physiology – OpenStax*

Syllabus – Five-Year Integrated Master of Physical Education and Sports.

3.3 Bruce M. Carlson (2014) - *The Human Body* – Elsevier/Saunders

3.4 Lindsay Biga et al. (2019)- *Anatomy & Physiology* – Oregon State Open Educational Resources

Module 4: Nervous, Excretory, and Endocrine System Hours of transaction:15

4.1 Nervous System

- Structure of a neuron.
- Overview of the organization of the nervous system (Central Nervous System, Peripheral Nervous System, Autonomic Nervous System, Somatic Nervous System, Sympathetic Nervous System, and parasympathetic Nervous System).
- Structure of the brain. (Fore brain, Midbrain, and Hindbrain)

4.2 Overview Excretory System

- Definition and significance of the excretory system.
- Structure of kidney (gross and of nephron).
- Filtration and Urine Formation

4.3 Endocrine System

- Location, Structure, and role of endocrine glands in maintaining homeostasis
- a) Pituitary, b) Thyroid, c) Adrenal, d) Pancreas, e) Gonads

Suggested reading specific to the Module

4.1 V Muruguvalan, *Anatomy and Physiology for Physical Education*

4.2 Brice M Carlson, *The Human Body*

4.3 A K Uppal and Vivek Chaudhary, *Health, Education, Anatomy and Physiology*

4.4 Nick Draper, *Exercise Physiology for Health and Sports Performance.*

Module 5 : Teacher Specific Module

Hours of transaction:10

- The respective teacher will prepare the module content, allowing for adaptability in designing the material according to feasibility, prior modules, and pertinent information

Core Compulsory Reading

- B. N. Gupta (2008) - *The role of Anatomy and Physiology* – Alfa Publications
- Graham Thompson (2010) *Physical Education – Anatomy and Exercise Physiology* – Hodder Education Group
- Tommy Boone (2017) – *A pressing concern in Exercise Physiology Commitment to Professionalism* – Bentham Science Publications

Core Suggested Reading

- Rod R. Seeley, Trent D. Stephens, Philip Tate. (2007) - *Anatomy and Physiology* – McGraw-Hill
- Garg, K., Mittal, P. S., & Chandrupatla, M. (2016). *Human Anatomy (7th Edn)*. New Delhi: CBS Publishers.
- Waugh, A., & Grant, A. (2014). *Anatomy and physiology in health and illness (12th*

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Edn).China: Churchill Livingstone Elsevier.

- Wingerd, B. (2014). *The human body: Concepts of anatomy and physiology* (3rd Edn).Baltimore: Wolters Kluwer.
- Netter, F. H. (2003). *Atlas of human anatomy*. New Jersey: Icon Learning Systems.
- Thibodeau, G. A., & Patton, K. T. (2003). *Anatomy and physiology*. St. Louis, Missouri: Elsevier.
- Waugh, A., & Grant, A. (2010). *Anatomy and physiology*. Edinburgh: Elsevier.

TEACHING LEARNING STRATEGIES

- The class will be taught by using lectures and demonstrations, seminars, classroom discussions, videos, charts, and presentation methods.

MODE OF TRANSACTION

- Lecture//Laboratory Work/ Field Work/ Outreach Activities/ Project Work/ Vocational Training/Viva/ Seminars/ Term Papers/Assignments/ Presentations/ Self-Study etc

ASSESSMENT RUBRICS

Evaluation Type		Marks
End Semester Evaluation		50
Continuous Evaluation		50
a)	Test Paper- 1 (Written/Oral)	10
b)	Test Paper-2 (Written/Oral)	10
c)	Assignment Seminar Record Viva-Voce Any other relevant mode of evaluation	(Any three- each for 10 marks) 10 X 3 = 30 Marks
Total		100

Sample Questions to test Outcomes.

1. Enumerate the functional and structural difference between smooth and rough endoplasmic reticulum
2. Explain the structure and classification of synovial joint
3. What are systemic and pulmonary circulation
4. Explain the mechanism of respiration
5. What is a sarcomere?

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SEMESTER I

MAJOR GAMES (TRACK AND FIELD)

Semester	Course Type	Course Level	Course Code	Credits	Total Hours
1	Non-Credit Course	100	Non-Credit Course – PES T&F Semester 1	Nil (Pass/Fail)	60

Learning Approach (Hours/ Week)			Evaluation (Pass/Fail)			Duration of ESE (Hours)
Lecture	Practical/ Internship	Tutorial	CE	ESE	Total	
	60		25	25	50	30 minutes per students

Student to acquire 40% marks in both CE and ESE for a pass

Course Description

The course of Practicum- track and field 100 level, is so designed to provide an opportunity to the students to learn the proper running techniques.

Course Outcomes: At the end of the course, the student will be able to

CO No.	Expected Outcome	Learning Domains
CO1	Understand the proper sprinting techniques	K,U
CO2	Demonstrate various drills and exercise to improve the running technique	U,A
CO3	Understand the pacing strategies of hurdles and distance running event	U,A
CO4	Demonstrate the race-walking techniques, baton exchange technique in relay and hurdle techniques	U,A

***Remember(R), Understand(U), Apply(A), analyze (An), Evaluate (E), Create(C), and Synthesis (Sy)**

Mapping of Course Outcomes to PSOs						
	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	✓	✓			✓	
CO2	✓	✓	✓			
CO3		✓		✓		
CO4	✓	✓	✓		✓	

COURSE CONTENTS

Module 1: Introduction to running events

Hours of transaction:10

- 1.1 Running Drills (high knees, butt kicks, bounding, grapevine drill (sideways running))
- 1.2 Core Exercises (planks, Russian twists, leg raises) and Strength exercises (Squats, Lunges)
- 1.3 Flexibility and Mobility Exercises (Dynamic Stretching, Foam Rolling)
- 1.4 Plyometric Exercises (Bounding, Box Jumps) and Speed Work (Interval Training, Ladder exercises)

Suggested Reading specific to module

- 1.1 Eugene Shane Lee, Jeremiah Whitefield (2010) - *Fundamentals of Sprinting – A guide for Sprinters – Xlibris U S*
- 1.2 Mike Brungardt, Kurt, Brett (2006). *The Complete Book of Core Training: The Definitive Resource for Shaping and Strengthening the 'Core' -- The Muscles of the Abdomen, Butt, Hips, and Lower Back Paperback*
- 1.3 James Atkinson(2023) *Stretching & Mobility: An Essential Stretching Exercise Book For Flexibility & Mobility Training (Home Workout, Weight Loss & Fitness Success) Kindle Edition*
- 1.4 Graeme Foreman, Andy Bradshaw (2009) - *An Introduction to Fundamentals of Movement – Coach wise*

Module 2: Sprint technique

Hours of transaction:10

- 2.1 Sprint technique (acceleration, maximum speed, arm & leg movements)
- 2.2 Different start techniques (block start, power start, rolling start, reaction start, standing start)
- 2.3 Different finish techniques (lean finish, dip finish, run through)
- 2.4 Proper use of starting blocks(block placement, foot placement, body position, hand placement, drive phase, acceleration)

Suggested Reading specific to module

- 2.1 Eugene Shane Lee, Jeremiah Whitefield (2010) - *Fundamentals of Sprinting – A guide for Sprinters – Xlibris U S*
- 2.2 <https://link.springer.com/article/10.1007/s40279-019-01138-1>
- 2.3 Graeme Foreman, Andy Bradshaw (2009) - *An Introduction to Fundamentals of Movement – Coachwise*
- 2.4 Evans DA (1984). *Teaching Athletics*. Hodder, London.

Module 3: Race walking and relay baton exchange technique Hours of transaction:15

- 3.1 Approach and Baton exchange (upsweep, down sweep & push pass exchange)
- 3.2 Relay Zone and Acceleration
- 3.3 Race walking techniques (proper posture, arms swing, stride length, heel-to-toe roll, maintain contact with the ground, hip rotation and pelvic stability, foot placement)
- 3.4 Drills and practice of technique

Suggested Reading specific to the module

- 3.1 Evans DA (1984). *Teaching Athletics*. Hodder, London.
- 3.2 Steve Silvey (2013). *Championship Relay Workouts for Track & Field: A Book Written by a Proven National Championship & Olympic Track & Field Coach*.
- 3.3 Dave McGovern (2020) *The Complete Guide to Competitive Walking*
- 3.4 Graeme Foreman, Andy Bradshaw (2009) - *An Introduction to Fundamentals of Movement*

Module 4: Hurdle techniques and distance running techniques

Hours of transaction:15

- 4.1 Proper running form (arm swing and foot strikes)
- 4.2 Endurance and pacing strategies
- 4.3 Introduction to Hurdling (hurdle mobility drills, basic hurdle clearance, rhythm and timing drills, acceleration and speed work)
- 4.4 Hurdle clearance techniques

Suggested Reading specific to the module

- 4.1 USA Track & Field (2015) - *Track & Field Coaching Essentials – Human Kinetics*
- 4.2 Gothi E (2004). *Teaching & Coaching Athletics*. Sport Pub., New Delhi.
- 4.3 https://www.atlbiate.com/graziano/graziano2021/libri%20sito/Moss_TricksOfTheTradeSprintsHurdlesRelays.pdf
- 4.4 Steven McGill (2020). *The Art of Hurdling: A Manual for Hurdle Coaches*

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Module 5 : Teacher Specific Module

Hours of transaction:10

- The respective teacher will prepare the module content, allowing for adaptability in designing the material according to feasibility, prior modules, and pertinent information.

Core Compulsory Readings

- Eugene Shane Lee, Jeremiah Whitefield (2010) - Fundamentals of Sprinting – A guide for Sprinters – Xlibris U S
- Graeme Foreman, Andy Bradshaw (2009) - An Introduction to Fundamentals of Movement – Coachwise
- USA Track & Field (2015) - Track & Field Coaching Essentials – Human Kinetics

Core Suggested Readings

- Vanaik A. (2017). Officiating and Coaching, Friends Publication. New Delhi.
- Renwick GR (2001). Play Better Athletics. Sports Pub, Delhi.
- Gupta R. (2004). Layout & Marking of Track & Field. Friends Publications. India. New Delhi.
- Handbook-Rules and Regulation. International Athletic Federation (2010).

TEACHING LEARNING STRATEGIES

- The content will be taught by using demonstration, explanation, presentation methods, videos, learning by doing, Whole part whole method Drills.

MODE OF TRANSACTION

- Practice of Techniques/ learning by doing/ Individual Practice etc.

ASSESSMENT RUBRICS

Evaluation Type		Marks
End Semester Evaluation		25
a)	Skill proficiency	15
b)	Record file	5
c)	Viva	5
Continuous Evaluation		25
a)	Skill proficiency	15
b)	Record file/Field Visit/Project Report	5
c)	Viva	5
Total		50

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SEMESTER I

MAJOR GAMES (FOOTBALL)

Semester	Course Type	Course Level	Course Code	Credits	Total Hours
1	Non-Credit Course	100	Non-Credit Course – PES FB Semester 1	Nil (Pass/Fail)	60

Learning Approach (Hours/ Week)			Evaluation (Pass/Fail)			Duration of ESE (Hours)
Lecture	Practical/ Internship	Tutorial	CE	ESE	Total	
	60		25	25	50	30 minutes per students

Student to acquire 40% marks in both CE and ESE for a pass

Course Description

The course of Practicum- football 100 level, is so designed to provide an opportunity to the students to learn the basic techniques of football

Course Outcomes: At the end of the course, the student will be able to

CO No.	Expected Outcome	Learning Domains
CO1	Understand the proper passing and techniques	R,U
CO2	Demonstrate various drills and exercises to improve the passing and receiving technique	U,A,
CO3	Understand the strategies of dribbling and kicking	R,U
CO4	Demonstrate the heading techniques, goalkeeping techniques and techniques in throw in	U,A,

***Remember(R), Understand(U), Apply(A), Analyse (An), Evaluate (E), Create(C), and Synthesis (Sy)**

Mapping of Course Outcomes to PSOs

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	✓	✓	✓			
CO2	✓	✓	✓	✓	✓	
CO3	✓	✓		✓		
CO4	✓	✓			✓	

COURSE CONTENTS

Module 1: Introduction to Football

Hours of transaction:10

- 1.5 Introduction to Football, Essential Equipment, and Court Measurements
- 1.6 Governing bodies of the game, Laws and their interpretations and duties of officials
- 1.7 Kicking
- 1.8 Variations in Kicking

Suggested Reading Specific to the Module

- 1.1 Ditmer, Warner Krutsch ,Football Fitness Training: A Scientific Approach
- 1.2 Greg Gatz .() Complete Conditioning for Soccer
- 1.3 Handbook- FIFA, The Law of the Game

Module 2: Passing and Receiving Technique

Hours of transaction:10

- 2.5 Fundamentals of Passing
- 2.6 Push Pass
- 2.7 Receiving
- 2.8 Trapping the ball

Suggested Reading Specific to the Module

- 2.1 Utpal Ganguli-Coaching youth football: A comprehensive guide for coaches of 6-11 year-olds
- 2.2 Buxton, Drewitt, Jim (2009)- Football Skill
- 2.3 Lal D. C (2007) – Skill and Tactics football

Module 3: Dribbling and shooting techniques

Hours of transaction:10

- 3.1 Fundamentals of Dribbling
- 3.2 Fundamentals of Shooting
- 3.3 Fundamentals of Throw-in
- 3.4 Fundamentals of crossing

Suggested Reading Specific to the Module

- 3.1 Mcavoy, Nelson (1998) -Teaching soccer fundamentals
- 3.2 Trimble, Allan (2000) – Coaching football successfully
- 3.3 Buxton, Drewitt, Jim (2009)- Football Skill

Module 4: Fundamentals of Heading, and Goalkeeping Hours of transaction:10

- 4.1 Fundamentals of Heading
- 4.2 Variations in Heading
- 4.3 Basics of goalkeeping
- 4.4 Ball Handling Methods and Diving

Suggested Reading specific to the Module

- 4.1 Mcavoy, Nelson (1998) -Teaching soccer fundamentals
- 4.2 Utpal Ganguli-Coaching youth football: A comprehensive guide for coaches of 6-11 year olds
- 4.3 Luxbacher,Joe – The soccer goalkeeper

Core Compulsory Readings

- Ditmer, Warner Krutsch, Football Fitness Training: A Scientific Approach
- Utpal Ganguli-Coaching youth football: A comprehensive guide for coaches of 6-11 year olds
- Greg Gatz .Complete Conditioning for Soccer
- Lal D. C (2007) – Skill and Tactics football.
- Mcavoy, Nelson (1998) -Teaching soccer fundamentals

TEACHING LEARNING STRATEGIES

- The content will be taught by using demonstration, explanation, presentation methods, videos, learning by doing, Whole part whole method Drills.

MODE OF TRANSACTION

- Practice of Techniques/ learning by doing/ Individual Practice etc.

ASSESSMENT RUBRICS

Evaluation Type		Marks
End Semester Evaluation		25
a)	Skill proficiency	15
b)	Record file	5
c)	Viva	5
Continuous Evaluation		25
a)	Skill proficiency	15
b)	Record file/Field Visit/Project Report	5
c)	Viva	5
Total		50

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SEMESTER II

KU2DSCPES102: FOUNDATION OF PHYSICAL EDUCATION, EXERCISE SCIENCE AND SPORT

Semester	Course Type	Course Level	Course Code	Credits	Total Hours
2	DSC	100	KU2DSCPES102	4	60

Learning Approach (Hours/ Week)			Marks Distribution			Duration of ESE (Hours)
Lecture	Practical/ Internship	Tutorial	CE	ESE	Total	
60	-	60	50	50	100	2 hrs

Course Description

This course offers an introduction to the concepts of Physical Education, exercise science, and sport, providing a dynamic nature of the discipline providing a knowledge base and information on expanding career opportunities in the field.

COURSE OUTCOMES

After the completion of the course, the students will be able to -

CO No.	Expected Outcome	Learning Domains
CO1	Understand the meaning and philosophy, goals and objectives of Physical Education, Exercise Science, and Sport	U
CO2	Understand the historical foundations and identify and recognize the implications of changing demographics for Physical Education, Exercise Science, and Sport.	U
CO3	Be oriented to biomechanical, physiological, sociological, and psychological foundations related to the discipline.	U
CO4	Understand the career and professional development and future trends in Physical Education, Exercise Science, and Sport.	U, A

***Remember(R), Understand(U), Apply(A), analyze (An), Evaluate (E), Create(C),and Synthesis (Sy)**

Mapping of Course Outcomes to PSOs

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	✓	✓	✓	✓	✓	✓
CO2	✓	✓	✓	✓	✓	
CO3	✓	✓	✓	✓	✓	✓
CO4	✓	✓	✓	✓	✓	

COURSE CONTENTS

Module 1: Introduction to Physical Education, Exercise Science and Sport.

Hoursof transaction:10

- 1.1 Understand the meaning and philosophy of contemporary physical education, exercise science, and sport.
- 1.2 Understand the goals and objectives of Physical Education in relation to the goals of education. Understand the domains and taxonomies of learning and assessment and purpose of learning.
- 1.3 Meaning and understanding of health and wellness and implications of health and wellness movement for Physical Education, Exercise Science and Sport.
- 1.4 Physical activity and fitness movement and their implications.

Suggested readings specific to the module.

- 1.1 Wuest, D A, and Bucher, Charles, (2010) A. Foundations of Physical Education, Exercise Science and Sport. Tata McGraw Hill., New Delhi
- 1.2 John, H.L., 1969, A brief history of Physical Education. The Ronald Press Company, New York.
- 1.3 Kamlesh, M.L., 1988, Physical Education Facts and Foundations. Chauhan Printing press. New Delhi.
- 1.4 Kamlesh, M.L., 1997. Foundations of Physical Education. Metropolitan Book Pvt.Ltd. New Delhi. 4
- 1.5 Willgoose.C., 1984, Curriculum Physical Education, Prentice-Hall, New Jersey.

Module 2: Historical Foundations and Changing Demographics of Physical Education, Exercise Science and Sport

Hours of transaction:10

- 2.1 Historical foundation of sport and physical education

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2.2 Significant recent developments in the field –

- Wellness movement
- School Physical Education and Physical Activity
- Disease prevention and health promotion

2.3 Olympics and Growth of Sports

2.4 Girls and women in sports; sports for differently abled.

Suggested Reading specific to module

2.1 *Wuest, D A, and Bucher, Charles, A. (2010) Foundations of Physical Education, Exercise Science and Sport. Tata McGraw Hill., New Delhi*

2.2 *Barrie Houlihan, Dominic Malcolm (2016)- Sports and society: a student introduction*

2.3 *Jay Coakley (2020)- Sports and Society: A Sociological perspective*

2.4 *David Kirk, Dawn Penney (2014)- Physical Education and Sports in a changing Society.*

2.5 *John Horne, Allen Tomilson (2012)- Sociology Of Sports and Physical Activity*

Module 3: The Scientific Basis of Physical Education, Exercise Science and Sports. **Hours of transaction:10**

3.1 Motor behavior and motor development

3.2 Philosophical Foundations of Physical Education; Idealism, Pragmatism, Naturalism & Existentialism

3.3 Understanding Kinesiology Biomechanics - Mechanical principles and concepts related to movement.

3.4 Overview of exercise physiology – Principles and physiological basis of exercise and fitness, development. Overview of nutrition and fitness.

3.5 Understanding the sociology of sport. Fundamental concepts of sport and exercise psychology.

Suggested Reading specific to module

3.1 *Bucher, Charles A., (1983). Foundations of Physical Education. St. Louis: The C.V. Mosby Company.*

3.2 *Kamlesh, M.L., (1988). Physical Education: Facts and Foundation. New Delhi: P.B. Publications*

3.3 *Sharma, O.P., (1998). History of Physical Education. New Delhi: Khel Shitya Kendra.*

3.4 *Wakharkar, D.G., (1967). Manual of Physical Education in India. Bombay: Pearl Publications .*

Module 4: Careers and Professional Development

Hours of transaction:10

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- 4.1 Choosing and career and maximizing professional development
- 4.2 Careers in Physical Education, Exercise Science and Sport –
 - Teaching
 - Coaching
 - Fitness and Health Related
 - Careers in sport
- 4.3 Major Schemes and programs related to physical education and sports - KheloIndia, Fit India programs, TOPS (Target Olympic Podium Scheme),
- 4.4 National awards and honors; Major sports competitions
- 4.5 Future trends in development and professional delivery – issues and challenges

Suggested Reading specific to module

- 4.1 Wuest, D A, and Bucher, Charles, (2010) A. Foundations of Physical Education, Exercise Science and Sport. Tata McGraw Hill., New Delhi*
- 4.2 Bevinson Perinbaraj. S, History of Physical Education, Vinsi Publications, Karaikudi 2002.*
- 4.3 Chandra Shekar. K, Foundation of Physical Education & Sports, Khel SahityaKendra, New Delhi, 2004.*
- 4.4 Deepak Jain, Foundation of Physical Education, Sports Publication New Delhi, 2003.*
- 4.5 Piyush Jain C.S. Tomar, History, Foundation of Physical Education and Educational Psychology, Khel Sahitya Kendra, New Delhi, 2006.*
- 4.6 Shandra Shekar, Principles & History of Physical Education, Khel Sahitya Kendra, New Delhi, 2004.*

Module 5: Teacher Specific Module

Hours of transaction:10

- The respective teacher will prepare the module content, allowing for adaptability in designing the material according to feasibility, prior modules, and pertinent information

Core Compulsory Readings

- Sharma O.P, History of Physical Education, Khel Sahitya Kendra, New Delhi, 2008.
- Sitaram Sharam & Anil kr. Vanaik, Principles of Physical Education, Friends Publication, New Delhi, 2003.
- Bucher, Charles A., (1983). Foundations of Physical Education. St. Louis: The C.V. Mosby Company.
- Kamlesh, M.L., (1988). Physical Education: Facts and Foundation. New Delhi: P.B. Publications

Core suggested readings.

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- Baljit Singh, Principles of Physical Education, Sports Publication New Delhi, 2009.
- Sanjay & A. Rawat, History, Principles and Foundation of Physical Education, Sports Publication New Delhi, 2015.

TEACHING LEARNING STRATEGIES

- The class will be taught by using lectures and demonstrations, seminars, classroom discussions, videos, charts, and presentation methods

MODE OF TRANSACTION

- Lecture//Laboratory Work/ Field Work/ Outreach Activities/ Project Work/ Vocational Training/Viva/ Seminars/ Term Papers/Assignments/ Presentations/Self-Study etc

ASSESSMENT RUBRICS

Evaluation Type		Marks
End Semester Evaluation		50
Continuous Evaluation		50
a)	Test Paper – 1 (Written/Oral)	10
b)	Test Paper – 2 (Written/Oral)	10
c)	Assignment Seminar Record Viva-Voce Any other relevant mode of evaluation	(Any three - each for 10 marks) 10 X 3 = 30 Marks
Total		100

Sample Questions to test Outcomes.

- Discuss the goals and objectives of Physical Education about goals of education.
- Write a short note on the Olympic movement and its influence on sports development.
- Discuss the Future trends in development and professional delivery in physical education.

SEMESTER II

**KU2DSCPES103:
BADMINTON**

Semester	Course Type	Course Level	Course Code	Credits	Total Hours
2	DSC	100	KU2DSCPES103	2	60

Learning Approach (Hours/ Week)			Marks Distribution			Duration of ESE (Hours)
Lecture	Practical/ Internship	Tutorial	CE	ESE	Total	
-	60	60	25	25	50	30 minutes per student

Course Description

This course offers the fundamental skills, rules and measurements of badminton. Covers basic technique and etiquette of both singles and doubles play. Allows students to enjoy badminton as a lifetime activity.

Course Outcomes: At the end of the course, the student will be able to

CO No.	Expected outcome	Learning Domains
CO1	Learn and demonstrate the fundamental skills of various services in badminton	R,U
CO2	Learn and demonstrate the fundamental overhead and underarm skills in badminton	R,U,
CO3	Understand the laws in badminton Understands the measurements of the court	R,U,A
CO4	Ability to officiate a badminton match	A, An

***Remember (R), Understand (U), Apply (A), Analyse (An), Evaluate (E), Create (C)**

Mapping of Course Outcomes to PSOs

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	✓	✓	✓			
CO2	✓		✓	✓	✓	
CO3	✓	✓		✓		
CO4	✓	✓	✓		✓	

COURSE CONTENTS

Module 1: Types of Service

Hours of transaction:10

- 1.1 Forehand high service
- 1.2 Forehand short service
- 1.3 Backhand short service (Singles/Doubles)
- 1.4 Backhand flick service

Suggested reading specific to the module

- 1.1 Plitt, Stephen. (2017). *Badminton for Beginners: Techniques, Tactics, Skills, and Drills for Shuttlecock Success.* CreateSpace Independent Publishing Platform.
- 1.2 Golds, Mark.(2016).*High performance in Badminton.* The Crowood Press Ltd,Ramsbury, Marlborough, Wiltshire.

Module 2: Fundamental skills and techniques – Backcourt strokes Hours of transaction:15

- 2.1 Overhead forehand clear
- 2.2 Overhead forehand drop
- 2.3 Overhead forehand smash
- 2.4 Backcourt movements

Suggested reading specific to the module

- 2.1 Dick, T.P. (2016). *Badminton Tactics in Singles and Doubles Play,* Read Books Ltd. Brahms, Bernd-Volker (2014).
- 2.2 *Badminton Handbook Training. Tactics. Competition(2ndEdn.).* Meyer& MeyerSport (UK) Ltd.

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2.3 Edwards, John. (2014). *CROWOOD SPORTS GUIDE Badminton: Technique, Tactics, Training* Crowood Press Ltd.

Module 3: Fundamental skills and techniques – Frontcourt strokes Hours of transaction:15

3.1 Forehand lift

3.2 Backhand lift

3.3 Forehand dribble and forehand net kills

3.4 Backhand dribble and net kills

3.5 Basic stance at the center, receiving stance, and racket-holding position.

Suggested reading specific to the module

3.1 Golds, Mark.(2016).*High performance in Badminton. The Crowood Press Ltd, Ramsbury, Marlborough, Wiltshire.*

3.2 Dick, T.P. (2016).*Badminton Tactics in Singles and Doubles Play, Read Books Ltd.*

3.3 Brahms, Bernd-Volker (2014). *Badminton Handbook Training. Tactics. Competition(2nd Edn.). Meyer & Meyer Sport (UK) Ltd.*

Module 4: Measurement of dimensions of the court. Basic rules and officiating of badminton, Governing bodies in badminton.

Hours of transaction:10

4.1 Measurement of dimensions of the court

4.2 Rules and officiating of singles and doubles matches.

4.3 Badminton Association of India,

4.4 Badminton World Federation

Suggested reading specific to the module

4.1 Golds, Mark.(2016).*High performance in Badminton. The Crowood Press Ltd, Ramsbury, Marlborough, Wiltshire.*

4.2 Dick, T.P. (2016).*Badminton Tactics in Singles and Doubles Play, Read Books Ltd.*

4.3 Brahms, Bernd-Volker (2014). *Badminton Handbook Training. Tactics. Competition(2nd Edn.). Meyer & Meyer Sport (UK) Ltd*

Module 5: Teacher Specific Module

Hours of transaction:10

- The respective teacher will prepare the module content, allowing for adaptability in designing the material according to feasibility, prior modules, and pertinent information.

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Core Compulsory Readings

- Plitt, Stephen. (2017). *Badminton for Beginners: Techniques, Tactics, Skills, and Drills for Shuttlecock Success*. CreateSpace Independent Publishing Platform.
- Golds, Mark.(2016).*High performance in Badminton*. The Crowood Press Ltd,Ramsbury, Marlborough, Wiltshire.
- Dick,T.P. (2016).*Badminton Tactics in Singles and Doubles Play*,Read Books Ltd.
- Brahms, Bernd-Volker (2014). *Badminton Handbook Training. Tactics.Competition*(2nd Edn.). Meyer & Meyer Sport (UK) Ltd.
- Edwards, John. (2014). *CROWOOD SPORTS GUIDE Badminton: Technique, Tactics, Training*Crowood Press Ltd.

Core Suggested Readings

- Chong Wei, Lee, Dato e'; [Patty Peck Sing Tai](#); [Loo Ting Tan](#) (2012).*Dare to be a Champion*. Selangor,Malaysia : Bukuganda Digital & Publication.
- Wadood, Tariq. (2014).*Badminton Essentials*.Createspace Independent Pub.
- Golds, Mark. (2002). *Badminton: Skills of the Game*. The Crowood Press Ltd.
- <https://bwfbadminton.com/>
- <https://corporate.bwfbadminton.com/statutes/>
- <https://development.bwfbadminton.com/coaches/level-2>
- <http://www.badmintonindia.org>

TEACHING LEARNING STRATEGIES

- The content will be taught by using demonstration, explanation, presentation methods, videos, learning by doing, Whole part whole method Drills.

MODE OF TRANSACTION

- Practice of Techniques/ learning by doing/ Individual Practice etc.

ASSESSMENT RUBRICS

Evaluation Type		Marks
End Semester Evaluation		25
a)	Skill proficiency	15
b)	Record file	5
c)	Viva	5
Continuous Evaluation		25
a)	Skill proficiency	15
b)	Record file/Field Visit/Project Report	5
c)	Viva	5
Total		50

**KU2DSCPES103: MAJOR GAMES
(VOLLEYBALL)**

Semester	Course Type	Course Level	Course Code	Credits	Total Hours
2	DSC	100	KU2DSCPES103	2	60

Learning Approach (Hours/ Week)			Marks Distribution			Duration of ESE (Hours)
Lecture	Practical/ Internship	Tutorial	CE	ESE	Total	
60	-	60	25	25	50	30 minutes per student

Student to acquire 40% marks in both CE and ESE for a pass

Course Description

The Practicum- Volleyball 100 course is designed to provide students with a comprehensive understanding of practical volleyball skills, tactics, and strategies through practical training sessions.

Course Outcomes:

At the end of the course, the student will be able to

CO No.	Expected outcome	Learning Domains
CO1	Will understand the fundamental skills of Volleyball.	R,U
CO2	Gain Knowledge about the rules & officiating of Volleyball	U,
CO3	Will know the layout and marking of Volleyball court	U,A
CO4	Thorough with teaching stages and coaching aspects of Volleyball.	A,An

***Remember (R), Understand (U), Apply (A), Analyse (An), Evaluate (E), Create (C)**

Mapping of Course Outcomes to PSOs

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	✓	✓	✓	✓		✓
CO2	✓	✓	✓			
CO3		✓		✓		
CO4	✓		✓		✓	

COURSE CONTENTS

Module 1:

Hours of transaction:10

- 1.1 History and development of Volleyball at world, Asia and India.
- 1.2 Organizational set up of the game at international, national and state level
- 1.3 Important competitions at various levels,
- 1.4 Distinguished players of the game

Suggested Reading specific to the module

- Franz Wegener (2005)- *The History of Basketball and Volleyball*
- American Volleyball coaches Assosiation, Kinda Lenberg (2006)-
Volleyballskill and Drills

Module 2:

Hours of transaction:10

- 2.1 Rules and interpretations.
- 2.2 Duties of officials.
- 2.3 Fundamental techniques of volleyball
- 2.4 Volley pass ,Dip pass, Smash, Service, Block

Suggested Reading specific to the module

- Jimmy Czimmek(2014) *Volleyball Training and Coaching A Complete Guidefor Coaches of All Competitive Levels*

Module 3:

Hours of transaction:15

- 3.1 Rolls & Dives and its variation
- 3.2 Tactics and systems of Play: Individual and group tactics
- 3.3 System of service reception
- 3.4 System of attack

Suggested Reading specific to the module

- Jimmy Czimmek(2014) *Volleyball Training and Coaching A Complete Guide for*

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Coaches of All Competitive Levels

Module 4:

Hours of transaction:15

- 4.1 System of defense, Analysis of the game and scoring
- 4.2 Lead-up games,
- 4.3 Layout, construction and maintenance of grounds, Teaching aid and gadgets
- 4.4 Selections of team and organization of short-term camps

Suggested Reading specific to the module

- Jaromír Šimonek (2015)- Coordination Abilities in VolleyballUSA Volleyball(2009)- Volleyball Systems & Strategies

Module 5 : Teacher Specific Module

Hours of transaction:10

- The respective teacher will prepare the module content, allowing for adaptability in designing the material according to feasibility, prior modules, and pertinent information.

Core Compulsory Readings

- American Volleyball coaches Association, Kinda Lenberg (2006)- Volleyball skill and Drills
- Jaromír Šimonek (2015)- Coordination Abilities in Volleyball
- Jimmy Czimmek(2014) Volleyball Training and Coaching A Complete Guide for Coaches of All Competitive Levels
- Kevin Durant (2018)- Volleyball Book for Dummies, How to Learn Volleyball Skills and Drills in 90 Minutes and Achieve Your Volleyball Dreams
- Franz Wegener (2005)- The History of Basketball and Volleyball
- USA Volleyball (2009)- Volleyball Systems & Strategies
- Tilithia Allen (2020)- All About Volleyball Drills Volleyball Drills Guide For All Levels: Gift Ideas for Holiday
- Jaromír Šimonek (2015)- Coordination Abilities in VolleyballUSA Volleyball (2009)-Volleyball Systems & Strategies

TEACHING LEARNING STRATEGIES

- The content will be taught by using demonstration, explanation, presentation methods, videos, learning by doing, Whole part whole method Drills.

MODE OF TRANSACTION

- Practice of Techniques/ learning by doing/ Individual Practice etc

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ASSESSMENT RUBRICS

Evaluation Type		Marks
End Semester Evaluation		25
a)	Skill proficiency	15
b)	Record file	5
c)	Viva	5
Continuous Evaluation		25
a)	Skill proficiency	15
b)	Record file/Field Visit/Project Report	5
c)	Viva	5
Total		50

SEMESTER II

YOGA

Semester	Course Type	Course Level	Course Code	Credits	Total Hours
3	Non-Credit Course	200	Non-Credit Course – PES Yoga Semester 2	Nil (Pass/Fail)	60

Learning Approach (Hours/ Week)			Evaluation (Pass/Fail)			Duration of ESE (Hours)
Lecture	Practical/ Internship	Tutorial	CE	ESE	Total	
-	60	-	25	25	50	

Lecture/Tutorials, P/I=Practical/Internship, CE =Continuous Evaluation, ESE = End Semester Evaluation

Course Description

This course helps to appraise an understanding of the principles of yogic practices also to Aquitaine with various types of asanas, pranayama and kriyas it will help integrating sports with yoga for performance enhancement.

Course Outcomes:

At the end of the course, the student will be able to

CO No.	Expected outcome	Learning Domains
CO1	Develop a foundational understanding of yogic principles and practices	R,U
CO2	Gain proficiency in various yoga asanas , improving flexibility, strength, balance, and overall physical well-being.	R,U,
CO3	Practice and perform pranayama and mudras enhancing respiratory health, increasing vitality, and balancing the flow of prana	R,U,A
CO4	Develop skills in mindfulness, concentration, and relaxation through the practice of meditation and relaxation techniques,	A,An

***Remember (R), Understand (U), Apply (A), Analyse (An), Evaluate (E), Create (C)**

Mapping of Course Outcomes to PSOs

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1		✓	✓	✓	✓	✓
CO2						
CO3		✓				
CO4	✓	✓	✓		✓	

COURSE CONTENTS

Module 1: Foundations of Yoga Practice

- 1.1 Shad karmas – Sutra Neti and Jala Dhouthi
- 1.2 Yogic Sukshma Vyayamas - Neck Movement, Shoulder Movement, Trunk Movement, Knee Movement, Ankle Movement.
- 1.3 Yogic Breathing - Hands in and out breathing, Hands Stretch breathing, Ankle Stretch breathing, Sectional breathing (Abdominal, Thoracic, clavicular)

Module 2: Asanas and Physical Practice

- 2.1 Yogic Surya Namaskara
- 2.2 Yogasanas
 - Meditative Asanas: Sukhasana, Swasthikasana, Padmasana, Vajrasana
 - Standing Asanas: Tadasana, Ardhakatichakrasana, Padahasthasana, Trikonasana
 - Sitting Asanas: Paschimottanasana, Shasakasana, Vakrasana, Janushirshasana
 - Supine Asanas: Pavanamukthasana, Uttnapadasana, Setubandhasana, Vipritakrani
 - Prone Asanas: Shalabhasana, Bhujangasana, Dhanurasana

Module 3: Breath and Energy Control

- 3.1 Pranayamas - Chandra Bhedha, Surya Bhedha, Anuloma villoma, Sheethali, Brahmari
- 3.2 Bandha and Mudra - Moola bandha, Uddyana Bandha, Jalandhara Bandha, chinMudra, Sambhavi Mudra, Shanmukhi Mudra

Module 4: Meditation and Relaxation

- 4.1 Meditation - Mindfulness Meditation, Breath Awareness Meditation,

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Affirmation meditation, Chakra Meditation

4.2 Relaxation Techniques - IRT, QRT, DRT, Shavas

Core Compulsory Readings

- Asana, Pranayama, Mudra and Bandha by Swami Satyananda Saraswati
- Lights on Yoga by B K S Iyengar
- Light on Pranayama by BKS Iyengar
- Prana Pranayama by Swami Niranjanananda Saraswati
- Yoga Darshan by Swami Niranjanananda Saraswati
- Hatha Yoga Pradipika by Swami Muktibodhananda
- A systematic Course in the Ancient Tantric Techniques of Yoga and Kriya by Swami Satyananda.

TEACHING LEARNING STRATEGIES

- The content will be taught by using demonstration, explanation, presentation methods, videos, learning by doing, Whole part whole method Drills.

MODE OF TRANSACTION

- Practice of Techniques/ learning by doing/ Individual Practice etc.

ASSESSMENT RUBRICS

Evaluation Type		Marks
End Semester Evaluation		50
Continuous Evaluation		50
a)	Test Paper – 1 (Written/Oral)	10
b)	Test Paper – 2 (Written/Oral)	10
c)	Assignment Seminar Record Viva-Voce Any other relevant mode of evaluation	(Any three - each for 10 marks) 10 X 3 = 30 Marks
Total		100

SEMESTER III

KU3DSCPES201 SCIENCE OF HUMAN MOVEMENT

Semester	Course Type	CourseLevel	Course Code	Credits	Total Hours
3	DSC	100	KU3DSCPES201	4	60

Learning Approach (Hours/ Week)			Marks Distribution			Duration of ESE (Hours)
Lecture	Practical/ Internship	Tutorial	CE	ESE	Total	
60	-	60	50	50	100	2 hr

Course Description

Fundamentals of human movements is a comprehensive course designed to provide undergraduate students with a solid understanding of the fundamental concepts, principles, and practices related to fitness, exercise, sports science, locomotor, non- locomotor, and manipulative movements. This course aims to equip students with the knowledge and skills necessary to promote health and well-being through physical activity and exercise.

Course Outcomes:

At the end of the course, the student will be able to

CO No.	Expected outcome	Learning Domains
CO1	Understand the basic concepts and terminology related to fitness, exercise, and sports science.	U
CO2	Identify the components of physical fitness and their importance for health and performance	U
CO3	Understand the fundamental principles of human movement.	U
CO4	Evaluate the significance of movement education in promoting physical literacy and overall well-being	A, An,E

***Remember (R), Understand (U), Apply (A), Analyse (An), Evaluate (E), Create(C)**

Mapping of Course Outcomes to PSOs

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	✓	✓	✓	✓	✓	✓
CO2	✓	✓	✓	✓	✓	✓
CO3	✓	✓	✓	✓	✓	✓
CO4	✓		✓	✓	✓	✓

COURSE CONTENTS

Module 1: Introduction to movement education Hours of transaction:15

- 1.1** Meaning definition and concepts of movement education
- 1.2** Importance of movement education in the field of physical education and sports.
- 1.3** Concept of Fundamental Movement Skills

Suggested reading Specific to the Module

- 1.1** Australia, S. (2021, May 22). *Physical literacy*. Retrieved from <https://www.sportaus.gov.au/>:
- 1.2** LeMond, G., & Hom, M. (2021). *The Science of Fitness: Power, Performance, and Endurance*. Princeton University Press
- 1.3** Clements, R. L., & Schneider, S. L. (2017). *Moving with words & actions: Physical literacy for preschool and primary children*. USA: Human Kinetics.
- 1.4** Johnson, S. M. (2020). *Exercise Science Fundamentals: From Theory to Practice*. Fitness Publications.

Module 2: Components of Physical Fitness Hours of transaction:15

- 2.1** Overview of basic Movements Locomotor Movements:
 - Overview of locomotor movements (walking, running, jumping, hopping, galloping)
 - Non-locomotor Movements: Understanding non-locomotor movements (bending, twisting, stretching, swaying)
 - Manipulative Movements: Introduction to manipulative movements (throwing, catching, kicking, striking)
- 2.2** Meaning of Movement Education Framework.
- 2.3** Components of Movement Education Framework:
 - Body Concept: Body Parts, Body Shapes, Actions of Body Parts,

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Actions of the whole body (Non-Locomotor, Locomotor, Manipulative Skills)

- Space Concept: Location, Direction, Level, Pathway and Extension, Planes.
- Effort Concept: Time, Force, Flow, Focus.
- Relationship Concept: People, Position, Timing, Goal, Environment.

Suggested reading Specific to the Module

2.1 Thompson, R. P. (2018). *Strength Training Essentials: Building Muscle and Power*. Strength Books.

2.2 Martin, S. K. (Ed.). (2019). *The Ultimate Guide to Bodyweight Exercises: Unleash Your Inner Strength*. Fitness Foundations

Module 3: Movement Education Framework Hours of transaction:10

3.1 Introduction to motor skills

- Significance of motor skills in daily activities.
- Concept of gross motor skills and fine motor skills

3.2 Factors Influencing Human Movement:

- Influence of genetic, environmental, cultural, and individual factors.
- Individual Differences in Motor Development:

3.3 Principles and theories of Motor Control and Learning:

- Maturation, environmental, and dynamic systems theories.

3.4 Fundamental Motor Patterns:

- Basic movement patterns form the foundation for skills. (Locomotor, object control, and stability skills.)

Suggested readings specific to the module.

3.1 Clements, R. L., & Schneider, S. L. (2017). *Moving with words & actions: Physical literacy for preschool and primary children*. USA: Human Kinetics.

3.2 Gardner, H. (2017). *Physical literacy on the move: Games for developing confidence and competence in physical activity*. USA: Human Kinetics.

Module 4: Introduction to Motor Development and Learning Hours of transaction:15

4.1 Foundational Understanding of kinesiology and biomechanics

4.2 Relevance of kinesiology and biomechanics to human movement.

4.3 Injury Prevention Strategies

4.4 Proper Warm-up and Cool-down, Recognizing Physical Discomfort

Suggested readings specific to the module.

4.1 Pangrazi, R. P., & Beighle, A. (2016). *Dynamic physical education for*
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elementary school children (18th Edn.). USA: Human Kinetics.

- 4.2 Clements, R. L., & Schneider, S. L. (2017). Moving with words & actions: Physical literacy for preschool and primary children. USA: Human Kinetics.

Module 5 : Teacher Specific Module

Hours of transaction:05

- The respective teacher will prepare the module content, allowing for adaptability in designing the material according to feasibility, prior modules, and pertinent information

Core Compulsory reading

- Garcia, K. M. (2020). *Structuring Your Fitness Routine: A Practical Guide to Balanced Exercise. Health and Wellness Books*
- LeMond, G., & Hom, M. (2021). *The Science of Fitness: Power, Performance, and Endurance. Princeton University Press.*
- Powers, S. K., & Howley, E. T. (2022). *Exercise Physiology: Theory and Application to Fitness and Performance. McGraw-Hill Education.*
- LeMond, G., & Hom, M. (2021). *The Science of Fitness: Power, Performance, and Endurance. Princeton University Press*
- Gardner, H. (2017). *Physical literacy on the move: Games for developing confidence and competence in physical activity. USA: Human Kinetics.*

Core suggested readings

- McArdle, W. D., Katch, F. I., & Katch, V. L. (2022). *Exercise Physiology: Nutrition, Energy, and Human Performance. Lippincott Williams & Wilkins.*
- LeMond, G., & Hom, M. (2021). *The Science of Fitness: Power, Performance, and Endurance. Princeton University Press.*
- Powers, S. K., & Howley, E. T. (2022). *Exercise Physiology: Theory and Application to Fitness and Performance. McGraw-Hill Education*
- American College of Sports Medicine. (2022). *ACSM's Guidelines for Exercise Testing and Prescription. Wolters Kluwer.*
- Kamlesh, M. (1988). *Physical Education Facts and Foundation. Faridabad: P. B Publications.*

TEACHING LEARNING STRATEGIES

- The class will be taught by using lectures and demonstrations, seminars, classroom discussion, videos, charts and presentation methods.

MODE OF TRANSACTION

- Lecture//Laboratory Work/ Field Work/ Outreach Activities/ Project Work/ Vocational Training/Viva/ Seminars/ Term Papers/Assignments/ Presentations/ Self-Study etc.,

ASSESSMENT RUBRICS

Evaluation Type		Marks
End Semester Evaluation		50
Continuous Evaluation		50
a)	Test Paper – 1 (Written/Oral)	10
b)	Test Paper – 2 (Written/Oral)	10
c)	Assignment Seminar Record Viva-Voce Any other relevant mode of evaluation	(Any three - each for 10 marks) 10 X 3 = 30 Marks
Total		100

Sample Questions to test Outcomes

1. What is movement education, and how does it differ from traditional physical education?
2. What is movement education framework, and how does it guide teaching and learning?
3. Explain the importance of fitness
4. Explain in detail the components of skill-related physical fitness and health-related physical fitness?

SEMESTER III

KU3DSCPES202: TEST AND MEASUREMENT

Semester	Course Type	Course Level	Course Code	Credits	Total Hours
3	DSC	200	KU3DSCPES202	4	60

Learning Approach (Hours/ Week)			Marks Distribution			Duration of ESE (Hours)
Lecture	Practical/ Internship	Tutorial	CE	ESE	Total	
60	-	60	50	50	100	2hrs

Lecture/Tutorials, P/I=Practical/Internship, CE =Continuous Evaluation, ESE = End Semester Evaluation

Course Description

This course will enable students to conduct related tests, measurements, and evaluations. The students will be able to assess the physical ability and performance of an individual in various sports.

Course Outcomes: At the end of the course, the student will be able to

CO No.	Expected outcome	Learning Domains
CO1	Develop concepts related to Tests, Measurement & Evaluation.	R,U
CO2	Construct a strong basis in the evaluation techniques through the various test and measurement methods used in physical education	R,U,
CO3	Analyze the physical ability and performance of an individual in various sports.	U,A,An
CO4	Develop the skills and techniques for the construction of new tests for various needs related to specific Sports Skills	A,An,C

***Remember (R), Understand (U), Apply (A), Analyse (An), Evaluate (E), Create(C)**

Mapping of Course Outcomes to PSOs

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	✓	✓	✓	✓	✓	✓
CO2	✓	✓		✓	✓	
CO3	✓	✓	✓		✓	✓
CO4	✓	✓	✓		✓	

COURSE CONTENTS

Module 1: Introduction to Test & Measurement & Evaluation

Hours of transaction:10

- 1.1 Meaning of the terms test, measurement, evolution, and statistics. Need and importance of test, measurement, and statistics in physical education
- 1.2 Type and classification of Test, Guidelines for constructing knowledge test.
- 1.3 Criteria for test selection, Scientific authenticity of technical standards (reliability, Validity, objectivity, norms)
- 1.4 Administrative feasibility or economy, Developmental values (Physical, Social).
- 1.5 Administration of testing programme, Advanced preparation, Duties during testing, Duties after testing

Suggested readings specific to the module.

- 1.1 Barron, H. M., & Mchee, R. (1997). *A practical approach to measurement in physical education. Philadelphia: Lea and Febiger*
- 1.2 Baumgartner TA Jackson AS Mahar MT and Rowe DA (2007). *Measurement for Evaluation in Physical Education. The McGraw Hill Companies. Inc. New York. USA*
- 1.3 Garrett, Henry E. *Statistics in Psychology and Education*
- 1.4 Barrow H.M. and McGee R. (1979). *A Practical Approach to Measurement in Physical Education. Lea & Febiger, Philadelphia. U.S.A.*

Module 2: Physical Fitness Test

Hours of transaction:10

- 2.1 Concept of physical fitness and general motor ability.
- 2.2 Measurement of fitness components: Muscular strength (isometric, isotonic and isokinetic), Muscular endurance(sit ups, pull ups), Cardio-respiratory endurance(Harward step test, Cooper 12 minute run/walk test
- 2.3 Agility (Sluttle run, squat trust), Speed (50m. dash, 4 sec. dash), Flexibility (Sit and reach, gomometry), Power (Medicine ball throw,

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vertical jump standing broad Jump

- 2.4** Fitness tests, Indiana Motor Fitness Test, J.C.R. Test, Kraus Weber Minimum Muscular Fitness Test, AAHPERD Youth Fitness Test, Rogers physical fitness index battery

Suggested Reading specific to module

- 2.1** Barron, H. M., & Mchee, R. (1997). *A practical approach to measurement in physical education.* Philadelphia: Lea and Febiger.
- 2.2** Clarke, H. Harrison and Clarke. David H. *Application of Measurement to Physical Education.* 6th edition Englewood Cliffs, N.J. Prentice Hall Inc. 1987. **2.3** Kansal DK (2012). *A practical approach to Measurement Evaluation in Physical Education & Sports selection.* Sports & Spiritual Science Publications, New Delhi
- 2.4** Mishra Sharad Chandra (2005). *Tests And Measurement in physical education.* Sports. Delhi

Module 3: Game Skill Test

Hours of transaction:15

- 3.1** Badminton: Miller Wall Volley Test. Lockhart and Mc Phersons badminton test, Basketball: Johnson Basketball test, Harrison Basketball Ability test
- 3.2** Football: Mor-Christian General Soccer Ability test battery, Johnson soccer test, McDonald Soccer Test
- 3.3** Hockey: Friedel Field Hockey test, Harbans hockey test, Dribbling and goal shooting test in hockey, Volleyball- Russell Lange volleyball test, Brady Volleyball test
- 3.4** Cricket: Sutcliff cricket test
- 3.5** Tennis: Dyer Tennis Test, Broer Miller Tennis test

Suggested Reading specific to module

- 3.1** Kansal, D.K. (1996). *Test and measurement in sports and physical education.* New Delhi: D.V.S. Publications
- 3.2** Sharma JP (2006). *Test and measurements in physical education. khel sahitya.* Delhi.
- 3.3** Tritschler K. Barrow & McGee's (2000). *Practical Measurement and Assessment.* Lippincott Williams & Wilkins. Philadelphia. U.S.A.

Module 4: Anthropometric, Physiological and Psychological Test

Hours of transaction:15

- 4.1 Method of Measuring Height: Standing Height, Sitting Height,
- 4.2 Methods of measuring Circumference: Arm, Waist, Hip, Thigh, Method of measuring skin fold: Triceps, Subscapular, Supra iliac
- 4.3 Testing of a physiological phenomenon- Blood pressure, breathing frequency, Vital capacity, Heart rate, Pulse rate, Body temperature and Body composition
- 4.4 Tests for psychological variables- Anxiety, Aggression, Team cohesion, Achievement motivation, Mental toughness, and Self-efficacy.

Suggested Reading specific to the module

- 4.1 ACSM (2001). *Guidelines for Exercise Testing and Prescription* by American College of Sports Medicine Human kinetics USA
- 4.2 Barron, H. M., & Mchee, R. (1997). *A practical approach to measurement in Physical Education.* Philadelphia: Lea and Febiger
- 4.3 Tritschler K. Barrow & McGee's (2000). *Practical Measurement and Assessment.* Lippincott Williams & Wilkins. Philadelphia. U.S.A.

Module 5: Teacher Specific Module

Hours of transaction:10

- The respective teacher will prepare the module content, flexibly designing the material according to feasibility, prior modules, and pertinent information.

Core Compulsory Readings

- Kansal, D.K. (1996). *Test and measurement in sports and physical education.* New Delhi: D.V.S. Publications
- ACSM (2001). *Guidelines for Exercise Testing and Prescription* by American College of Sports Medicine Human kinetics USA.
- Barrow H.M. and McGee R. (1979). *A Practical Approach to Measurement in Physical Education.* Lea & Febiger, Philadelphia. U.S.A.
- Baumgartner TA Jackson AS Mahar MT and Rowe DA (2007). *Measurement for Evaluation in Physical Education.* The McGraw Hill Companies. Inc. New York. USA.
- Kansal DK (2012). *A practical approach to Measurement Evaluation in Physical Education & Sports selection.* Sports & Spiritual Science Publications, New Delhi.
- Miller David K (2006). *Measurement by the Physical Educator: Why and How.* McGraw Hill. Boston, U.S.A.
- Mishra Sharad Chandra (2005). *Tests And Measurement in physical*

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education.Sports.

TEACHING LEARNING STRATEGIES

- The class will be taught by using lectures and demonstrations, seminars, classroom discussions, videos, charts, and presentation methods

MODE OF TRANSACTION

- Lecture//Laboratory Work/ Field Work/ Outreach Activities/ Project Work/ Vocational Training/Viva/ Seminars/ Term Papers/Assignments/ Presentations/ Self-Study etc

ASSESSMENT RUBRICS

Evaluation Type		Marks
End Semester Evaluation		50
Continuous Evaluation		50
a)	Test Paper – 1 (Written/Oral)	10
b)	Test Paper – 2 (Written/Oral)	10
c)	Assignment Seminar Record Viva-Voce Any other relevant mode of evaluation	(Any three - each for 10 marks) 10 X 3 = 30 Marks
Total		100

Sample Questions to test Outcomes

- Write in details the type and classification of test and the Guidelines for constructing knowledge test.
- Explain the measurement techniques for various fitness components
- Illustrate and explain the procedure for conducting following tests
 - a) Miller Wall Volley Test for badminton
 - b) McDonald Soccer test
- What are anthropometric tests? Explain the conduct of any 5 items

SEMESTER III

KU3DSCPES203: HEALTH EDUCATION

Semester	Course Type	Course Level	Course Code	Credits	Total Hours
3	DSC	200	KU3DSCPES203	4	60

Learning Approach (Hours/ Week)			Marks Distribution			Duration of ESE (Hours)
Lecture	Practical/ Internship	Tutorial	CE	ESE	Total	
60	-	60	50	50	100	2 hrs

Lecture/Tutorials, P/I=Practical/Internship, CE =Continuous Evaluation, ESE = End Semester Evaluation

Course Description

This course aims to empower students with a comprehensive understanding of health and wellness, focusing on essential concepts skills, and behaviors necessary for leading a healthy lifestyle. Each module covers specific topics relevant to promoting physical mental, emotional and social wellbeing, along with strategies for disease prevention and health promotion.

Course Outcomes:

At the end of the course, the student will be able to

CO No.	Expected outcome	Learning Domains
CO1	Understand the factors that influence health and wellness	R,U
CO2	Explain the concept of physical fitness , health-related, and motor fitness	R,U,
CO3	Evaluate primary health status	U,A, An
CO4	Identify common diseases and methods for prevention and control	A, An,C

****Remember (R), Understand (U), Apply (A), Analyse (An), Evaluate (E), Create(C)***

Mapping of Course Outcomes to PSOs

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	✓	✓	✓	✓		
CO2	✓	✓	✓	✓		
CO3	✓	✓	✓		✓	
CO4	✓	✓	✓		✓	

COURSE CONTENTS

Module 1: Introduction to Health and Wellness

Hours of transaction:10

1.1 Overview of Health Education

1.2 Definitions of health and wellness, Principles of Health Education

1.3 Dimensions of Health and Wellness(Physical, Mental, Emotional, Social),Factors Influencing Health Behavior, Practice of Health Education

1.4 Importance of Health Education and Personal Health Goal Setting, Health promotion strategies, Role of heredity, and Genetics in achieving positive health, Importance and benefits of regular physical activity for health and well-being.

Suggested readings specific to the module.

1.1 Koelen, M., & Ban, A. (2004). *Health education and health promotion. Wageningen, Netherlands: Wageningen Academic Publishers. ISBN 9789076998442*

1.2 Gilbert, G., Sawyer, R., & McNeill, B. (2011). *Health education. Sudbury, Mass.: Jones and Bartlett Publishers. ISBN 978076375929*

1.3 Randall R. Cottrell, Denise Seabert, Caile Spear, James F. McKenzie (2021)*Principles of Health Education and Promotion*

1.4 Manoj Sharma, John Albert Romas(2012)- *Theoretical Foundations of Health Education and Health Promotion*

Module 2: Healthy Lifestyle and Behavior

Hours of transaction:10

2.1Physical activity and Exercise, Benefits of Regular Exercise, Types of Physical activity, Developing Fitness plan

2.2 Definitions of fitness, exercise, physical activity, and sports, Types of fitness - Skill-related physical fitness and Health related physical fitness, and Assessment methods for evaluating each component of fitness,The body responds to

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various types of exercise

2.3 Introduction to FITT (Frequency, Intensity, Time, Type) principles for designing exercise programs and Significance of rest and recovery means.

2.4 Nutrition and Dietary guidelines, Importance of balanced diet, Food groups and nutrient functions, Meal planning and healthy eating habits

Suggested Reading specific to the module

2.1 Isaac K. Ngugi, Helen O'Sullivan, Hanaa Osman(2020)-
Consumer Behaviour in Food and Healthy Lifestyle

2.2 Allen W. Jackson (2004)- *Physical Activity for Health and Fitness*

2.3 Mark A. Powell (2011)- *Physical Fitness Training, Effects, and Maintaining*

2.4 Gerald F. Combs Jr., James P. McClung (2016) - *The Vitamins Fundamental Aspects in Nutrition and Health*

Module 3: Health Promotion and Disease Prevention

Hours of transaction:15

3.1 Preventive healthcare measures, Immunization and Vaccination

3.2 Hygiene and sanitation practices, Common Communicable Diseases- Risk factors and prevention

3.3 Non- communicable diseases- Risk factors and prevention, Substance Abuse and Addiction – Tobacco, Alcohol, Drugs

3.4 Sedentary lifestyle diseases - Risk factors and management, Sexual Health Education

Suggested Reading specific to the module

3.1 M. Kumar R. Kumar (2004) - *Guide to Prevention of Lifestyle Diseases*

3.2 World Health Organization, Patient Safety (2009)- *WHO Guidelines on Hand Hygiene in Health Care*

3.3 Jeremy Hawker, Norman Begg, Ralf Reintjes, Karl Ekdahl, (2019)-*Communicable Disease Control and Health Protection Handbook*

3.4 Manoj Sharma, John Albert Romas (2012)- *Theoretical Foundations of Health Education and Health Promotion*

Module 4: Social Health Services and School Health Programme **Hours of transaction:15**

4.1 Importance of School Health Services, Health problems in the school-going child

4.2 School Health administration and maintenance of records. Preparation of Health Card, Brief description of the role of school health services-

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Mental health, Playfield safety, First aid

4.3 Air pollution and its effect on health and occupational diseases.

4.4 Light, noise, temperature and their effects on health, Disposal of garbage, sanitary latrine, Septic tank, Sewage treatment

Suggested Reading specific to the module

4.1 U.S., Department of Education, Office of Educational Research and Improvement(1993)- *Comprehensive School Health Education Programs*

4.2 B. R. Gurjar, Bhola R. Gurjar, C.S. P. Ojha, Luisa T. Molina (2010) - *AirPollution Health and Environmental Impacts*

4.3 IntechOpen (2011) - *Advanced Topics in Environmental Health and Air Pollution Case Studies*

Module 5 : Teacher Specific Module

Hours of transaction:10

- The respective teacher will prepare the module content, flexibly designing the material according to feasibility, prior modules, and pertinent information.

Core Compulsory Readings

- Gilbert, G., Sawyer, R., & McNeill, B. (2011). Health education. Sudbury,Mass.: Jones and Bartlett Publishers. ISBN 978076375929
- B. R. Gurjar, Bhola R. Gurjar, C.S. P. Ojha, Luisa T. Molina (2010) - *AirPollution Health and Environmental Impacts*
- Manoj Sharma, John Albert Romas (2012)- *Theoretical Foundations of Health Education and Health Promotion*
- World Health Organization, Patient Safety (2009)- *WHO Guidelines on HandHygiene in Health Care*
- Koelen, M., & Ban, A. (2004). Health education and health promotion. Wageningen, Netherlands: Wageningen Academic Publishers.
- Isaac K. Ngugi, Helen O'Sullivan, Hanaa Osman(2020)- *ConsumerBehaviour in Food and Healthy Lifestyle*

TEACHING LEARNING STRATEGIES

- The class will be taught by using lectures and demonstrations, seminars, classroom discussions, videos, charts, and presentation methods

MODE OF TRANSACTION

- Lecture//Laboratory Work/ Field Work/ Outreach Activities/ Project Work/ Vocational Training/Viva/ Seminars/ Term Papers/Assignments/ Presentations/ Self-Study etc

ASSESSMENT RUBRICS

Evaluation Type		Marks
End Semester Evaluation		50
Continuous Evaluation		50
a)	Test Paper – 1 (Written/Oral)	10
b)	Test Paper – 2 (Written/Oral)	10
c)	Assignment Seminar Record Viva-Voce Any other relevant mode of evaluation	(Any three - each for 10 marks) 10 X 3 = 30 Marks
Total		100

Sample Questions to test Outcomes

- Discuss the types of Physical activity and steps in developing a fitness plan
- Write in detail the preventive health measures.
- What are sedentary lifestyle diseases? Explain the risk factors and management for sedentary lifestyle diseases?
- Explain the significance of School Health program administration and maintenance of records.

SEMESTER III**KU3DSCPES204: MAJOR GAMES (KABADDI/KHO-KHO)**

Semester	Course Type	Course Level	Course Code	Credits	Total Hours
3	DSC	200	KU3DSCPES204	2	60

Learning Approach (Hours/ Week)			Marks Distribution			Duration of ESE (Hours)
Lecture	Practical/ Internship	Tutorial	CE	ESE	Total	
	60		25	25	50	30 minutes per student

Lecture/Tutorials, P/I=Practical/Internship, CE =Continuous Evaluation, ESE = End Semester Evaluation

Course Description

This course will enable students to understand the basic skills of Kho-Kho and Kabaddi and the ways to improve performance. It aims to develop an understanding about the rules and regulations, dimensions of the court, duties of the officials (before, during and after the match), duties of coach and captain, structure and functions of National and International Kho-Kho and Kabaddi Federations

Course Outcomes:

At the end of the course, the student will be able to

CO No.	Expected outcome	Learning Domains
CO1	Understand the fundamental skills and concept of Kabaddi	R,U
CO2	Demonstrate various drills and exercises to improve the raiding and defending technique	R,U,A
CO3	Understand the fundamental skills and concept of Kho-kho	R,U,A
CO4	Develop proficiency in marking of the court, rules and officiating skills in kho kho	A,An,E

***Remember (R), Understand (U), Apply (A), Analyse (An), Evaluate (E), Create**

Mapping of Course Outcomes to PSOs

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	✓	✓	✓	✓		✓
CO2	✓	✓	✓			
CO3		✓		✓		
CO4	✓		✓		✓	

COURSE CONTENTS

Module 1: Introduction to Kabaddi Fundamental Skill of Raiding

Hours of transaction:10

- 1.1 Overview of Kabaddi: history, rules and variations, Importance of Physical Fitness, and conditioning for Kabaddi
- 1.2 Understanding and practicing Kabaddi court dimensions, Basic Footwork and Body Positioning
- 1.3 Developing effective raiding strategies, Skills in Raiding-Touching with hand, various kicks, crossing of the bulk line, Crossing of Bonus
- 1.4 Techniques for quick touches and escapes

Suggested Reading specific to the module

- 1.1 Ashok Dhynchand- *Kabaddi: Techniques and Tactics*
- 1.2 International Kabaddi Federation- *Kabaddi: Rules Regulations*
- 1.3 Ministry of Youth Affairs and Sports, Govt. of India- *Kabaddi coaching Manual*
- 1.4 Kabaddi Resource Center- *Kabaddi, The ultimate guide to the Sport*
- 1.5 Sanjay Kumar, Ajay Takur – *Kabaddi, A coaching perspective*

Module 2: Fundamental Skills of Defending and Advanced Techniques

Hours of transaction:15

- 2.1 Defensive stands and blocking techniques, Defensive skills: blocking, dodging, and tackling.
- 2.2 Defensive strategies: teamwork, positioning, and reading the opponent's moves, Specialized skills: ankle holds, thigh holds, and chain tackles.
- 2.3 Advanced raiding techniques: bonus point raids, toe touches and escape from chains, Catching formation.
- 2.4 Various holds, Techniques of escaping from chain formation, combined formation, Team formations and positions in Kabaddi: raider, defenders,

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and all-rounder.

Suggested Reading specific to the module.

2.1 Luthra (2005) – *Exploring Health and Physical Education Book VII* – BharatPublishing House.

2.2 Chaudhary (2018) – *Kabaddi by Nature* – Palimpsest Publishers

2.3 Mahto and Kumar (2023) – *Health Education & Wellness, Yoga Education, Sports, Nutrition & Fitness*

2.4 Ming (2023) – *Battle on the Court* – Amazon Digital Services LLC – Kdp

Module 3: Introduction to Kho-Kho Fundamental Skill of Kho-Kho

2.5 Hours of transaction:15

3.1 General skills of the game-Running, chasing, Dodging, Faking etc.

3.2 Skills in chasing-Correct Kho, moving on the lanes, Pursuing the runner, Tapping the inactive runner, Tapping the runner on heels, tapping on the pole, Diving, Judgment in giving Kho, Rectification of Foul.

3.3 Skills in running- Zigzag running, Single and double chain, Ring play, rolling in the sides, Dodging while facing and on the back, fakes on the pole, fake legs, body arm etc, Combination of different skills.

3.4 Dimensions of the court, Rules and their interpretations, Officiating

Suggested Reading specific to the module

3.1 Rather (2018) – *Physical Education Base & Basics: Part – 2* – Notion Press

3.2 Sharma – *Health and Physical Education Lab Manual and Practical Book* – NewSaraswati House India Pvt Ltd

3.3 Luthra (2005) – *Exploring Health and Physical Education Book VII* – BharatPublishing House

Module 4: Rules and Interpretations and Dimensions of the Court

Hours of transaction:10

4.1 Dimensions of the Court

4.2 Rules and Interpretations of Kho-Kho

4.3 Officiating in Kho-Kho

Suggested Reading specific to the module

4.1 Srivastava (2010) – *Book of Rules of Games and Sports* – Sports Publication

4.2 Luthra (2005) – *Exploring Health and Physical Education Book VII* – BharatPublishing House

Module 5 : Teacher Specific Module

Hours of transaction:10

- The respective teacher will prepare the module content, flexibly designing the material according to feasibility, prior modules, and pertinent information.

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Core Compulsory Readings

- Kabaddi Resource Center- Kabaddi , The ultimate guide to the Sport
- Sanjay Kumar, Ajay Takur – Kabaddi ,A coaching perspective Ashok Dhynchand- Kabaddi: Techniques and Tactics

TEACHING LEARNING STRATEGIES

- The content will be taught by using demonstration, explanation, presentation methods, videos, learning by doing, Whole part whole method Drills.

MODE OF TRANSACTION

- Practice of Techniques/ learning by doing/ Individual Practice etc.

ASSESSMENT RUBRICS

Evaluation Type		Marks
End Semester Evaluation		25
a)	Skill proficiency	15
b)	Record file	5
c)	Viva	5
Continuous Evaluation		25
a)	Skill proficiency	15
b)	Record file/Field Visit/Project Report	5
c)	Viva	5
Total		50

SEMESTER IV

KU4DSCPES205: KINESIOLOGY AND SPORTS BIOMECHANICS

Semester	Course Type	Course Level	Course Code	Credits	Total Hours
4	DSC	200	KU4DSCPES205	4	60

Learning Approach (Hours/ Week)			Marks Distribution			Duration of ESE (Hours)
Lecture	Practical/ Internship	Tutorial	CE	ESE	Total	
60	-	60	50	50	100	2 hrs

Lecture/Tutorials, P/I=Practical/Internship, CE =Continuous Evaluation, ESE = End Semester Evaluation

Course Description

This course provides an in-depth exploration of the fundamental principles of kinesiology and biomechanics, focusing on their application in physical education and sports. Students will gain a comprehensive understanding of the anatomical and mechanical aspects of human movement, including the terminology, structural classification of joints and muscles, major muscle groups, and their actions around various joints.

Course Outcomes:

At the end of the course, the student will be able to

CO No.	Expected outcome	Learning Domains
CO1	Understand the meaning, definition, and concepts of kinesiology and biomechanics, including their roles in physical education and sports	R,U
CO2	Demonstrate proficiency in identifying the location, origin, insertion, and actions of major muscles around the joints	R,U,
CO3	Understand the organization of mechanics including the distinction between kinematics and kinetics	R,U,A

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CO4	Demonstrate proficiency in calculating and interpreting linear and angular kinematics parameters.	A,An
CO5	Understand osteokinematics and arthrokinematics and their significance in describing motion, including the various types of displacement at body segments using the Cartesian coordinate system	A, An
CO6	Explain the functions of the lever system, including force and mechanical advantages, and differentiate between the types of lever systems	A,E,An

***Remember (R), Understand (U), Apply (A), Analyse (An), Evaluate (E), Create(C)**

Mapping of Course Outcomes to PSOs

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	✓	✓	✓	✓	✓	✓
CO2	✓	✓	✓	✓	✓	
CO3		✓	✓	✓	✓	
CO4	✓	✓	✓		✓	
CO5	✓		✓	✓	✓	✓
CO6		✓	✓	✓	✓	✓

COURSE CONTENTS

Module 1: Introduction to kinesiology and biomechanics

Hours of transaction:10

- 1.1** Meaning definition and concept of kinesiology and biomechanics
 - Role of kinesiology and biomechanics in physical education and sports
- 1.2** Terminologies
 - Fundamental and anatomical positions
 - Terminology of muscular attachments
- 1.3** Mechanical and Physiological Fundamentals
 - Orientation of planes and axes of motion
 - Fundamental joint movements
 - Types of muscle contractions

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- All or none law, Stretch reflex.

Suggested readings specific to the module.

1.1 Dr. Praveen Kumar (2021) - *Sports Biomechanics and Kinesiology* – Friends Publications (India)

1.2 Peter Merton McGinnis (2013) - *Biomechanics of sports and exercise* – Human Kinetics

1.3 Vladimir M. Zatsiorsky (2002) - *Kinetics of Human Motion* – Vladimir M. Zatsiorsky Human Kinetics

1.4 David Paul Greene, Susan L. Roberts (2015) - *Kinesiology – Movement in the context of activity* – Elsevier Health Sciences

Module 2: Location, origin, insertion, and actions of major muscle around joints

Hours of transaction:15

2.1 Structural Kinesiology

- Structural and Functional classification of joints
- Structural and Functional classification of muscles

2.2 Major Movements and Muscles in the Upper Body

- Shoulder girdle and associated muscles: Pectoralis major, Biceps brachii, Deltoid, Triceps brachii, Latissimus dorsi, Rhomboid, Trapezius, scapular muscles
- The trunk and lumbar region Muscles: Rectus abdominis, External oblique, and Internal oblique
- Elbow and wrist joint

2.3 Major movements and muscles in the lower Body

- Pelvic girdle muscles: Iliopsoas, Gluteus maximus, Sartorius, hamstring group, and quadriceps groups
- Knee and ankle complex: Gastrocnemius, soleus, Tibialis anterior, Tibialis posterior

Suggested reading specific to the module

2.1 Christy J. Cael (2022) - *Functional Anatomy* – Jones & Bartlett Learning

2.2 Don Meikle (1997) - *Muscles of the human body*

2.3 J. Gordon Betts, et.al, (2013) - *Anatomy and Physiology* – OpenStax

2.4 David Paul Greene, Susan L. Roberts (2015) - *Kinesiology – Movement in the context of activity* – Elsevier Health Sciences

Module 3: Fundamental of mechanical principles

Hours of transaction:15

3.1 The Organization of Mechanics

3.2 Kinematics

- Linear angular and general motion

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- Linear kinematics
- Angular kinematics

3.3 Kinetics

- Force, Inertia, Impulse, and Torque
- Mass, Weight, Matter and Momentum
- Pressure, Friction, Centripetal force, and Centrifugal force
- Equilibrium balance and Stability
- Work, Power and Energy

3.4 Newton's laws of motion

Suggested reading specific to the module

3.1 *Peter Guthrie Tait (2007) - Newton's Laws of Motion – Harvard University*

3.2 *Jason Zimba (2009) - Force and Motion – John Hopkins University Press*

3.3 *Susan L. Roberts & Sharon A. Falkenburg (2010) - Biomechanics – Mosby YearBook*

3.4 *Florante Jr Pose - Buoyancy – The Archimedes Principle – Grin Verlag*

Module 4: Kinematics of body segments

Hours of transaction:10

4.1 Osteo kinematics and arthrokinematics

- Descriptions of motion: Types of displacement at body segments
- Location of displacement in place (cartesian coordinate system)

4.2 Introduction to force

- Definition of force and force vectors
- Force of gravity, Centre of mass, Center of gravity, and Line of gravity
- Types of force (external and internal)
- Vertical and linear force system

4.3 Lever system

- Functions of lever system (force and mechanical advantages)
- Types of lever system
- Anatomical examples of lever system

Suggested reading specific to the module

4.1 *Nicholas Stergiou (2020) - Biomechanics and Gait analysis – Elsevier Science*

4.2 *Andrew Olesnicky, Neville Lawrence (2003) Physics – Projectile Motion – GregEather*

4.3 *Micheal Aloysius MacConaill, John V. Basmajian (1977) - Muscles and Movements– A Basis for Human Kinesiology – R. E. Krieger Publishing Company*

Module 5 : Teacher Specific Module

Hours of transaction:10

- The respective teacher will prepare the module content, allowing for adaptability in designing the material according to feasibility, prior modules, and pertinent information

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Core Compulsory Readings

- Dr. A.K. Uppal and Dr. Jogiswar Goswami (2020) - Kinesiology and Biomechanics –Friends Publications (Indai)
- Dr. Praveen Kumar (2021) - Sports Biomechanics and Kinesiology – Friends Publications (India)
- Donald. Neumann (2010) - Kinesiology of the Musculoskeletal System – mosby/Elsevier

Core Suggested Readings

- Marion Ruth Broar (2008) - An Introduction to Kinesiology – The University ofMichigan
- McGinnis, P. (2013). Biomechanics of sport and exercise. Champaign, IL: HumanKinetics. ISBN 9780736079662
- Blazeovich, A. (2007). Sports biomechanics. London: A. & C. Black. ISBN 9780713678710
- Bartlett, R. (2007). Introduction to sports biomechanics. London: Routledge,Taylor & Francis Group. ISBN 9780415339933
- Hall, S. (2014) Basic biomechanics. McGraw Hill Higher Educat. ISBN 9780073522760
- Knudson, D. (2007). Fundamentals of biomechanics. New York, NY: Springer.ISBN 978-0-387-49311-4

TEACHING LEARNING STRATEGIES

The class will be taught by using lectures and demonstration, seminars, classroomdiscussion, videos, charts and presentations method.

MODE OF TRANSACTION

Lecture//Laboratory Work/ Field Work/ Outreach Activities/ Project Work/ Vocational Training/Viva/ Seminars/ Term Papers/Assignments/ Presentations/ Self-Studyetc

ASSESSMENT RUBRICS

Evaluation Type		Marks
End Semester Evaluation		50
Continuous Evaluation		50
a)	Test Paper – 1 (Written/Oral)	10
b)	Test Paper – 2 (Written/Oral)	10
c)	Assignment Seminar Record Viva-Voce Any other relevant mode of evaluation	(Any three - each for 10 marks) 10 X 3 = 30 Marks
Total		100

Sample Questions to test Outcomes

- Explain the role of kinesiology and biomechanics in physical education and sports
- Briefly explain the structural and functional properties of Shoulder
- Differentiate angular and linear kinematics
- Explain class 3 lever with suitable anatomical and general examples

SEMESTER IV

**KU4DSCPES206: EMERGING TRENDS IN SPORTS
MANAGEMENT**

Semester	Course Type	Course Level	Course Code	Credits	Total Hours
4	DSC	200	KU4DSCPES206	4	60

Learning Approach (Hours/ Week)			Marks Distribution			Duration of ESE (Hours)
Lecture	Practical/ Internship	Tutorial	CE	ESE	Total	
60	-	60	50	50	100	2 hrs

Lecture/Tutorials, P/I=Practical/Internship, CE =Continuous Evaluation, ESE = End Semester Evaluation

Course Description

This course will enable students to understand the concept of Sports Management essential skills of sports management, event management in physical education.

Course Outcomes:

At the end of the course, the student will be able to

CO No.	Expected outcome	Learning Domains
CO1	Describe the organization and administration of sports programmes.	R,U
CO2	Analyze and interpret sports philosophy, sports sociology, business systems, sports management, public administration, and marketing techniques.	R,U,E
CO3	Develop opportunities to construct & design the curriculum of PE in broader aspects realizing the age group, gender considerations and physiological basis.	R,U,A,C
CO4	Comprehend the basic principles and importance of Sports management	A, An,E

***Remember (R), Understand (U), Apply (A), Analyse (An), Evaluate (E), Create(C)**

Mapping of Course Outcomes to PSOs

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	✓	✓		✓		
CO2	✓	✓	✓	✓	✓	✓
CO3		✓	✓	✓	✓	✓
CO4	✓	✓	✓		✓	

COURSE CONTENTS

Module 1: Introduction to management

Hours of transaction:10

- 1.1 Management: Meaning, Definitions, Scope and Principles
- 1.2 Basic principles and Procedure of sports Management and Functions of sports Management
- 1.3 Importance and Scope of Management in Physical Education and sports, Manager: function; and Qualities
- 1.4 Personal Management: Objectives of Personal Management, Personal Policies.

Suggested readings specific to the module.

- 1.1 Bucher, C.A.(2002). *Management of Physical Educational and Sports.*(12th Ed.)
- 1.2 Allen, L.A. (1988) *Management & Organization.* Kogakusha Co. Tokyo
- 1.3 Charles A. Bucker, *Management of Physical Education and Athletic Programmes,* St. Louis, C.V. Mosby Co. 1987.
- 1.4 P.M . Joseph, *Organization of Physical Education O.S.A.T.* I.P.E.Kandivali Bombay, 1956.

Module 2: Facility and Equipment Management

Hours of transaction:15

- 2.1 Management of infrastructure, Equipment's, Need for and importance of equipment Management, Types of Equipment
- 2.2 Playfields – Location, area standard, preparation, layout and maintenance, Gymnasium – Construction, allied, facilities, care and maintenance, Swimming Pool – Construction, Dimensions, marking, filtration and supervision of pool
- 2.3 Criteria of selection, procedure of purchase of equipment, Guidelines for the selection of equipment and Supplies
- 2.4 Equipment Room, Equipment and supply Management, Guidelines for checking, storing, issuing, care and maintenance and supplies of

equipment

Suggested Reading specific to the module

- 2.1 Frostdick, S., &Walley, L. (2003). *Sports and Safety Management. USA: Adivision of Reed Education and Professional Publishing Ltd.*
- 2.2 Horine., Larry. (1985). *Administration of Physical Education and Sports Programmes. New York :Saundress college publication*
- 2.3 Kamlesh, M. L. (2000). *Management Concepts in Physical Education andSports. New ,Delhi : B.V. Gupta Publication*
- 2.4 Mastoralexis, L.P., & Barr, C.A. (1998). *Principles and Practice of SportsManagement. Maryland: Aspen Publication*

Module 3: Management Structure for Physical Education and Sports Programme

Hours of transaction:15

- 3.1 Organization and Structure of Physical Education and Sports at School Collegeand University, Management Guidelines for School, College Sports Programmes
- 3.2 Need and importance of time table in physical Education, Factors affecting time table
- 3.3 Class management, Planning and preparation, Checking attendance and Records
- 3.4 Community-based Physical Education and sports programme, Principles ofPublic Relations - Public Relations in School and Communities
- 3.5 Importance of financial management, Physical Education Budget and sourcesof financial support

Suggested Reading specific to the module

- 3.1 Hughes and French, *Administration of Physical Education New York RonaldPress Co. 1954.*
- 3.2 Harold J. Vander Zwag, *Sports Management in Schools and Colleges, NewMacmillan Publishing Co. 1984.*
- 3.3 Frostdick, S., &Walley, L. (2003). *Sports and Safety Management. USA: Adivision of Reed Education and Professional Publishing Ltd.*
- 3.4 Horine., Larry. (1985). *Administration of Physical Education and Sports Programmes. New York :Saundress college publication*

Module 4: Tournament Management

Hours of transaction:10

- 4.1 Tournament organization, Types of tournaments, Knock- Out, League, combination and challenge tournaments
- 4.2 Intramural competition, Objectives and importance of Intramural and Extramural competition, Objectives of Extramural tournaments

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4.3 Organizing sports meets in School/College, Planning and Organizing a sportsevent

4.4 Audit management of a sports event, Report Preparation of sports event

Suggested Reading specific to module

4.1 Charles. A. Busher, *Administration of Physical Education and Athletic programme*, St Louis ,The C.V. Mosby Co. 1975

4.2 Horine., Larry. (1985). *Administration of Physical Education and Sports Programmes*. New York :Saundress college publication

4.3 Govindrajulu, .N. (2005). *Management of Physical Education and Sports Programme*. New Delhi : Friends Publication

Module 5 : Teacher Specific Module

Hours of transaction:10

- The respective teacher will prepare the module content, allowing for adaptability in designing the material according to feasibility, prior modules, and pertinent information.

Core Compulsory Readings

- Sandhu, K. *Sports Dynamics: Psychology, Sociology and Management*
- Sivia, G.S (1991). *Sports Management in Universities*, New Delhi: A.I.U. DeenDayal Upadhyaya Marg.
- Bucher, C.A.(2002). *Management of Physical Educational and Sports*.(12th Ed.).

USA :McGarw Hill Co.

- Chakraborti, S.(2007). *Sports Management*. New Delhi: Friends Publication.
- Frostdick, S., &Walley, L. (2003). *Sports and Safety Management*. USA: Adivision of Reed Education and Professional Publishing Ltd.
- Govindrajulu, .N. (2005). *Management of Physical Education and SportsProgramme*. New Delhi : Friends Publication.
- Kamlesh, M. L. (2000). *Management Concepts in Physical Education andSports*.

New Delhi : B.V. Gupta Publication.

- Mastoralexis, L.P., & Barr, C.A. (1998). *Principles and Practice of Sport*

TEACHING LEARNING STRATEGIES

- The class will be taught by using lectures and demonstrations, seminars, classroom discussions, videos, charts, and presentation methods

MODE OF TRANSACTION

- Lecture//Laboratory Work/ Field Work/ Outreach Activities/ Project Work/ Vocational Training/Viva/ Seminars/ Term Papers/Assignments/ Presentations/ Self-Study etc

ASSESSMENT RUBRICS

Evaluation Type		Marks
End Semester Evaluation		50
Continuous Evaluation		50
a)	Test Paper – 1 (Written/Oral)	10
b)	Test Paper – 2 (Written/Oral)	10
c)	Assignment Seminar Record Viva-Voce Any other relevant mode of evaluation	(Any three - each for 10 marks) 10 X 3 = 30 Marks
Total		100

Sample Questions to test Outcomes.

- Enlist the importance and Scope of Management in Physical Education and sports
- Discuss the significance of financial and audit management of a sports event
- Explain the features of Knock- Out ,League, combination and challenge tournaments
- What are the criteria's to be followed for selection, procedure of purchase of equipment, Guidelines for the selection of equipment and Supplies

SEMESTER IV

KU4DSCPES207: YOGA SCIENCE FOR WELLNESS

Semester	Course Type	Course Level	Course Code	Credits	Total Hours
4	DSC	200	KU4DSCPES207	4	75

Learning Approach (Hours/ Week)			Marks Distribution			Duration of ESE (Hours)
Lecture	Practical/ Internship	Tutorial	CE	ESE	Total	
45	30	-	50	50	100	2hrs

Lecture/Tutorials, P/I=Practical/Internship, CE =Continuous Evaluation, ESE = End Semester Evaluation

Course Description

This course will enable students to understand the modern concept of preventive and promotive aspects of yogic practices. It aims to develop understanding about the aim and objective of sports training, principles of sports training, system of sports training, training components, training process and training programming and planning.

Course Outcomes:

At the end of the course, the student will be able to

CO No.	Expected outcome	Learning Domains
CO1	Understand the preventive and promotive aspects of Yogic practices	R,U
CO2	Understand traditional text-based knowledge of Yoga along with modern sciences	R,U,
CO3	Know and practice yogic kriyas, mudras and management of Yoga for lifestyle diseases	R,U,A

***Remember (R), Understand (U), Apply (A), Analyse (An), Evaluate (E), Create(C)**

Mapping of Course Outcomes to PSOs						
	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	✓					
CO2	✓					
CO3	✓	✓	✓	✓		

COURSE CONTENTS

Module 1: Introduction

Hours of transaction:15

- 1.1 Origin of yoga and its development.
- 1.2 Yoga: meaning, objectives and definitions.
- 1.3 Importance of yoga personal and social lifestyle.
- 1.4 Concepts and mis-concepts of yoga.

Suggested readings specific to the Module

- 1.1 Prasada Rama (1988), *Patanjali's Yoga Sutras Translation*, Published from Munshiram Ashram, New Delhi.
- 1.2 Rajjan, S. M. (1985). *Yoga strengthening of relaxation for sports man*. New Delhi: Allied
- 1.3 Vivekananda Swami (2009), *Rajayoga*, Published from, Advaita Ashram, Kolkata.
- 1.4 Jois Pattabhi (1962), *Yoga mala – Part I*, Published by Asthangayoga Nilaya, Mysore.

Module 2: Types of Yoga

Hours of transaction:15

- 2.1 Schools of yoga- Hatha Yoga, Raja Yoga, Bhakti Yoga, Jnana Yoga and Karma Yoga.
- 2.2 An introduction to the fundamentals of Ashtanga Yoga
- 2.3 Concept of Chakras and Aura.
- 2.4 Meditation: Meaning, Techniques and Benefits of Meditation.

Suggested readings specific to the Module

- 2.1 Satyananda Saraswati Swami (1997), *Asana, Pranayama, Mudra, Bandha*, Published by Bihar School of Yoga, Munger, Bihar.
- 2.2 *Hathayoga Pradipika of Swatmarama (1994)*, Published by The Adyar library and research centre, Chennai.
- 2.3 Jois Pattabhi (1962), *Yoga mala – Part I*, Published by Asthangayoga Nilaya, Mysore.

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2.4 Gore M. M. (2005), *Anatomy and physiology of yogic practices*, published by

New Age Books, New Delhi.

2.5 Swami Sathyanda Saraswathi. (2006), *Four Chaptres on Freedom*, Published by Bihar School of Yoga, Munger, Bihar.

Module 3: Kriyas and Mudras

Hours of transaction:20

3.1 Shat-Kriyas: Meaning, Definition and Types according to Hatha Yoga.

3.2 Pranayama: Definition, different Types according to Hatha Yoga.

3.3 Asanas: Meaning, different Types, Methodology and Benefits.

3.4 Mudras: Definition and types according to Hatha Yoga.

Suggested readings specific to the Module

3.1 Satyananda Saraswati Swami (1997), *Asana, Pranayama, Mudra, Bandha*, Published by Bihar School of Yoga, Munger, Bihar.

3.2 Prasad Rama (1988), *Patanjali's Yoga Sutras Translation*, Published from Munshiram Ashram, New Delhi.

3.3 Satyananda Saraswati Swami (1997), *Asana, Pranayama, Mudra, Bandha*, Published by Bihar School of Yoga, Munger, Bihar.

Module 4: Yoga and Body Systems

Hours of transaction:20

4.1 Yoga: Basic Anatomy and Physiology of Skelton, Circulatory, Digestive, Nervous, Excretory, Respiratory System.

4.2 Yoga Regeneration Exercise-Power Yoga.

4.3 Yogic management for lifestyle diseases.

4.4 Role of Yoga in Psychological Preparation of athlete: Mental Wellbeing, Anxiety, Depression Concentration, Self-Actualization.

Suggested readings specific to the Module

4.1 Kaminoff, L. et al (2007). *Yoga Anatomy. Human Kinetics, USA.*

4.2 Kirk, M. (2005). *The Hatha Yoga Illustrated. Human Kinetics, USA.*

4.3 Sri Swami Rama, (2001). *Breathing. Rishikesh Sadhana Mandir Trust.*

4.4 Swami Veda Bharti (2000). *Yoga Polity. Economy and Family. Rishikesh Sadhana Mandir Trust*

Module 5 : Teacher Specific Module

Hours of transaction:05

- The respective teacher will prepare the module content, allowing for adaptability in designing the material according to feasibility, prior modules, and pertinent information

Core Compulsory readings

- Rajjan, S. M.(1985). *Yoga strengthening of relaxation for sports man.* New Delhi: Allied
- Vivekananda Swami (2009), *Rajayoga*, Published from, Advaita Ashram,

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Kolkata.

- Prasada Rama (1988), Patanjali's Yoga Sutras Translation, Published from Munshiram Ashram, New Delhi.
- Satyananda Saraswati Swami (1997), Asana, Pranayama, Mudra, Bandha, Published by Bihar School of Yoga, Munger, Bihar.
- Hathayoga Pradipika of Swatmarama (1994), Published by The Adyar library and research centre, Chennai
- Jois Pattabhi (1962), Yoga mala – Part I, Published by Asthangayoga Nilaya, Mysore.
- Gore M. M. (2005), Anatomy and physiology of yogic practices, published by New Age Books, New Delhi.
- Mukerji, A.P. (2010). The Doctrine and Practice of Yoga. General Books, LLC, New Delhi.
- Sharma JP and Ganesh S (2007). Yog Kala Ek Prichya. Friends Publication. New Delhi
- Sharma JP (2007). Manav jeevanam yoga. Friends Publication. New Delhi.
- Sharma Jai Prakash And Sehgal Madhu (2006). Yog-Shiksha. Friends Publication. Delhi.

Core suggested readings

- Anand Omprakash (2001). Yog Dawra Kaya Kalp, Kanpur. Sewasth Sahitya Perakashan
- Iyengar, B.K.S. (1995). Light on Yoga : The Bible of Modern Yoga. Schocken Publishers, USA.
- Norton, W.W. (2010). Yoga for Osteoporosis : The Complete Guide. W.W. Norton & Company, USA.
- Sarin N (2003). Yoga Dawara Ragoon Ka Upchhar. Khel Sahitya Kendra

TEACHING LEARNING STRATEGIES

The content of the syllabus may be taught by using lecture method, discussion method, quiz method, educational videos, charts, and assignment method depending upon the resources and facilities available at the University/Institute/Department/Colleges.

MODE OF TRANSACTION

Lecture/Discussions/Fieldwork/Project/Work/Viva/Seminars/Term Papers/Presentations/Self/ Learning Instructional Material etc.

ASSESSMENT RUBRICS

Evaluation Type		Marks
End Semester Evaluation		50
Continuous Evaluation		50
a)	Test Paper – 1 (Written/Oral)	10
b)	Test Paper – 2 (Written/Oral)	10
c)	Assignment Seminar Record Viva-Voce Any other relevant mode of evaluation	(Any three - each for 10 marks) 10 X 3 = 30 Marks
Total		100

Sample Questions to test Outcomes.

- Explain the importance of yoga in a personal and social lifestyle
- What are Shat-Kriyas: give meaning, Definition and Types according to Hatha Yoga?
- What are mudras, explain the types and their significance?
- Discuss the role of yoga in psychological preparation of an athlete

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SEMESTER IV

KU4DSCPES208: CRICKET

Semester	Course Type	CourseLevel	Course Code	Credits	Total Hours
4	DSC	200	KU5DSCPES208	2	60

Learning Approach (Hours/ Week)			Marks Distribution			Duration of ESE (Hours)
Lecture	Practical/ Internship	Tutorial	CE	ESE	Total	
-	60	30	25	25	50	30 minutes per students

Lecture/Tutorials, P/I=Practical/Internship, CE =Continuous Evaluation, ESE = End Semester Evaluation

Course Description

This course will enable the students to understand the fundamental skills of cricket and the ways to improve performance. It aims to develop an understanding of the rules and regulations, dimensions of the pitch, and duties of the officials (before, during, and after the match)

Course Outcomes: At the end of the course, the student will be able to

CO No.	Expected outcome	Learning Domains
CO1	Understand the fundamental skills of Cricket	R,U,A
CO2	Demonstrate various drills and exercises to improve batting, bowling, fielding, and wicket-keeping	U,A,An
CO3	Develop proficiency in essential skills and techniques in cricket	E,A,An

***Remember (R), Understand (U), Apply (A), Analyse (An), Evaluate (E), Create (C)**

Mapping of Course Outcomes to PSOs						
	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1		✓	✓	✓		
CO2	✓		✓	✓		
CO3	✓	✓	✓	✓		

COURSE CONTENTS

Module I: Introduction

Hours of transaction: 6

- 1.1 Introduction to Cricket, Different formats of the game
- 1.2 Laws and their interpretations and duties of officials, Cricket Controlling Bodies
- 1.3 Fundamental skills-Batting, the Grip, Stance at the wicket, Taking guard, Backlift, Footwork
- 1.4 Defensive strokes in Batting, forward defensive shot, backfoot defense

Suggested reading specific to the Module

- 1.1 *Cricket: Training and Conditioning for Cricket Alan Pearson (2016)*
- 1.2 *Coaching Youth Cricket: An Essential Guide for Coaches Luke Sellers (2014)*
- 1.3 *101 Youth Cricket Drills Age 7-11 Luke Sellers (2012)*
- 1.4 *Tom Smith's Cricket Umpiring And Scoring: Laws of Cricket Tom Smith (2012)*

Module II: Batting

Hours of transaction:10

- 2.1 Attacking strokes in Batting. Off drive and on drive
- 2.2 Running between the wickets
- 2.3 Bowling-Basic action, Side on, front on
- 2.4 Fast bowling

Suggested reading specific to the Module.

- 2.1 *Skills: Cricket – Batting (2022)*
Cricket: The Essentials of the Game Richard Hadlee (2004)
- 2.2 *Batting: A Comprehensive Modern Guide for Cricket Players James Knott, Andy O'Connor (2022)*
- 2.3 *Cricket Coaching Manual Monika Arora (2005)*

Module III: Bowling

Hours of transaction:6

- 3.1 Medium pace bowling
- 3.2 Spin bowling
- 3.3 Off spin

3.4 Leg spin

Suggested readings specific to the Module.

3.1 *Bowling Sam Collins, Mark Davis (2012)*

3.2 *Skills: Cricket – Bowling Luke Sellers (2021)*

3.3 *Fast Bowler's Bible Ian Pont (2013)*

3.4 *Cricket: The Essentials of the Game Richard Hadlee (2004)*

Module IV: Fielding and Wicketkeeping

Hours of transaction:8

4.1 Fundamentals of Fielding, positioning, chasing, throwing

4.2 Fundamentals of wicket keeping, stance at the crease, positioning the hands

4.3 Catching Techniques, Conventional, Reverse cup

4.4 Fielding the ball, Defensive and attacking fielding

Suggested readings specific to the module

4.1 *Cricket Fielding: Know the Game Skills Luke Sellers (2008)*

4.2 *Fielding Drills in Cricket Suresh Kutty K (2008)*

4.3 *How to Play Cricket Garrie Hutchinson (2002)*

4.4 *Learn to Play Cricket: Teach Yourself Mark Butcher, Paul Abraham (2010)*

Core Compulsory Readings

- *The Biomechanics of Batting, Swinging and Hitting Glenn Fleisig, Young-HooKwon (2016)*
- *Understanding Cricket Julia Hickey (2006)*

Core Suggested Readings

- *The Art of Fast Bowling Dennis Lillee (1978)*
- *How To Play Cricket: Your Step-By-Step Guide To Playing Cricket How Expert(2011)*

TEACHING LEARNING STRATEGIES

The content will be taught by using demonstration, explanation, and presentation methods, videos, learning by doing, whole-part method drills

MODE OF TRANSACTION

The practice of techniques/learning by doing/ individual practice etc..

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ASSESSMENT RUBRICS

Evaluation Type		Marks
End Semester Evaluation		25
a)	Skill proficiency	15
b)	Record file	5
c)	Viva	5
Continuous Evaluation		25
a)	Skill proficiency	15
b)	Record file/Field Visit/Project Report	5
c)	Viva	5
Total		50

**KU4DSCPES208:
SOFTBALL**

Semester	Course Type	Course Level	Course Code	Credits	Total Hours
4	DSC	200	KU5DSCPES205	2	30

Learning Approach (Hours/ Week)			Marks Distribution			Duration of ESE (Hours)
Lecture	Practical/ Internship	Tutorial	CE	ESE	Total	
-	30	30	25	25	50	30 minutes per students

Course Description

This course will enable the students to understand the fundamental skills of softball and the ways to improve performance. It aims to develop an understanding of the rules and regulations, dimensions of the court, and duties of the officials (before, during, and after the match)

Course Outcomes: At the end of the course, the student will be able to

CO No.	Expected outcome	Learning Domains
CO1	Understand the fundamental skills of Softball	R,U,A
CO2	Demonstrate various drills and exercises to improve HITting, Pitching, Throwing, and Catching	U,A,An
CO3	Develop proficiency in essential skills and techniques in Softball	E,A,An

***Remember (R), Understand (U), Apply (A), Analyse (An), Evaluate (E), Create (C)**

Mapping of Course Outcomes to PSOs

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1		✓	✓	✓		
CO2	✓		✓	✓		
CO3	✓	✓	✓	✓		

Module I: Introduction

Hours of transaction:06

- 1.1 Introduction to Softball
- 1.2 Slugger, ball, area of play, gloves, supporting gears
- 1.3 Rules of the Game
- 1.4 Officiating and Score Sheet Operations

Suggested reading specific to the Module

- 1.1 *An Insider's Guide to Softball Adam Hofstetter, Jayne Baker (2014)*
- 1.2 *Beginning Softball Julie Jensen (1997)*
- 1.3 *Softball: A Step-by-step Guide Dick Walker (1990)*
- 1.4 *Softball: Rules, Tips, Strategy, and Safety Adam Hofstetter (2007)*

Module II: Throwing

Hours of transaction:06

- 2.1 Fundamentals of Throwing
- 2.2 Under Arm Throw
- 2.3 Side Arm Throw
- 2.4 Over Arm Throw

Suggested reading specific to the Module

- 2.1 *Baseball and Softball Gabriel Sanna (2014)*
- 2.2 *Softball Cari Meister (2016)*
- 2.3 *A Basic Guide to Softball United States Olympic Committee · (2001)*
- 2.4 *Coaching Youth Softball Babe Ruth League, Inc. (2019)*

Module III: Catching

Hours of transaction:06

- 3.1 Catching Technique
- 3.2 Receiving Ground Ball and Fly Ball
- 3.3 Catcher's Positioning in the Catcher's Box
- 3.4 Base Running Rolling Start, Track Start, Sliding

Suggested readings specific to the Module.

- 3.1 *Softball Fundamentals Rick Noren (2005)*

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3.2 *Softball: Steps to Success* Diane L. Potter, Lynn V. Johnson (2007)

3.3 *Coaching Youth Softball American Sport Education Program* (2007)

3.4 *Softball* Kristin Wolden Nitz (2000)

Module IV: Hitting and Pitching

Hours of transaction:08

4.1 Hitting/Batting

4.2 Grip, Stance, Stride, Hip Rotation, Swing, Follow Through

4.3 Bunting: Stance, Hand, and Bat Positioning

4.4 Pitching: Grip, Stance, Pump/Drive Phase, Stride, Pitching Arm Action, DeliveryPhase, Follow Through

Suggested readings specific to the Module.

4.1 *Practice Perfect Softball National Fastpitch Coaches Association* (2016)

4.2 *Defensive Softball Drills* Jacquie Joseph (1998)

4.3 *Fastpitch The Untold History of Softball and the Women Who Made the Game*

4.4 *By Erica Westly* (2017)

4.5 *Fast-Pitch Softball: Girls Rocking It* Abigail McIntyre, Ann Wesley (2015)

Core Compulsory Readings

- *The Illustrated Rules of Softball* Anne Sublett (1996)
- *The Softball Drill Book* Kirk Walker (2007)
- *Coaching Fastpitch Softball Successfully* Kathy Veroni, Roanna Brazier (2005)

Core Suggested Readings

- *Practice Perfect Softball National Fastpitch Coaches Association* (2016)
- *Softball: Steps to Success* Diane L. Potter, Lynn V. Johnson (2007)

TEACHING LEARNING STRATEGIES

The content will be taught by using demonstration, explanation, and presentation methods, videos, learning by doing, whole-part method drills

MODE OF TRANSACTION

The practice of techniques/learning by doing/ individual practice etc.

ASSESSMENT RUBRICS

Evaluation Type		Marks
End Semester Evaluation		25
a)	Skill proficiency	15
b)	Record file	5
c)	Viva	5
Continuous Evaluation		25
a)	Skill proficiency	15
b)	Record file/Field Visit/Project Report	5
c)	Viva	5
Total		50

SEMESTER V

KU5DSCPES301: EXERCISE PHYSIOLOGY

Semester	Course Type	Course Level	Course Code	Credits	Total Hours
5	DSC	300	KU5DSCPES301	4	60

Learning Approach (Hours/ Week)			Marks Distribution			Duration of ESE (Hours)
Lecture	Practical/ Internship	Tutorial	CE	ESE	Total	
60	-	60	50	50	100	2 hrs

Lecture/Tutorials, P/I=Practical/Internship, CE =Continuous Evaluation, ESE = End Semester Evaluation

Course Description

This course will enable students to understand the structural and functional aspects of the human body. It aims to develop an understanding of the organization of the human body and its regulations, their support and movements, integration, and control systems.

Course Outcomes:

At the end of the course, the student will be able to

CO No.	Expected outcome	Learning Domains
CO1	Describe the structural properties and functions of the cardiovascular and respiratory systems and their adaptations to exercise.	R,U
CO2	Explain the anatomy, composition, and functions of skeletal muscles and their responses to different types of training.	R,U,
CO3	Understand the principles of energy metabolism and the role of different energy systems and nutrients in fueling muscular activity.	R,U,A

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CO4	Analyze the hormonal responses to exercise and their influence on adaptation and performance.	A, An
CO5	Evaluate the impact of environmental factors on exercise performance and the strategies for adaptation.	A, An, E
CO6	Discuss the types of ergogenic aids used in sports and their effects on performance, including ethical considerations.	A, An, E, C

***Remember (R), Understand (U), Apply (A), Analyse (An), Evaluate (E), Create (C)**

Mapping of Course Outcomes to PSOs

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	✓	✓	✓	✓	✓	✓
CO2	✓	✓	✓	✓	✓	
CO3		✓	✓	✓	✓	
CO4	✓	✓	✓		✓	
CO5			✓	✓	✓	✓
CO6		✓	✓	✓	✓	✓

Module:1 Cardiovascular and Respiratory Systems in Exercise

Hours of transaction:10

1.1 Structural properties of the cardiovascular system.

- Cardiac anatomy, blood vessels, valves, control and direction of blood flow
- Blood flow dynamics
- Blood pressure, Cardiac cycle, Cardiac output, Heart rate, Stroke volume
- Cardiac hypertrophy and hyperplasia
- Acute and Chronic Cardio Adaptations to Exercise

1.2 Structural properties of the Respiratory system

- Respiratory anatomy and functions of organs
- Respiratory muscles
- Breathing mechanism and ventilation
- Process of inspiration and expiration
- Minute ventilation, Ventilation during exercise, ventilation and Anaerobic threshold

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1.3 Lung volumes and capacities

- Overview of Spirograph reading
- Ventilatory responses to exercise intensity and environmental conditions
- Exercise-induced respiratory muscle fatigue and its implications
- Acute and Chronic Respiratory Adaptations to Exercise

1.4 Integration of cardiovascular and respiratory responses during exercise

- Cardiovascular-Respiratory Coupling
- Oxygen Uptake Dynamics

Suggested reading specific to the Module

1.1 Davidson, D.S.& Morgan. (2002) *Human body revealed. Great Britain, Dorling*

1.2 Kindersley Bruce M. Carlson (2014) - *The Human Body – Elsevier/Saunders*

1.3 Guy Orchard & Brian Nation (2015) - *Cell structure and function – OUP Oxford*

1.4 Manocchia. P. (2007) *Anatomy of Exercise-A trainers inside guide to your workout. NewYork, A&C Black*

Module 2: Neuro-Musculoskeletal system in exercise

Hours of transaction:15

2.1 Anatomy of skeletal muscles.

- Structure, Composition, Properties, and functions of skeletal muscles.
- Muscle fiber type
- Energy Release Mechanisms in Muscle Contraction
- Sliding filament theory
- Types of Muscle contraction and relaxation.

2.2 Neuromuscular junction

- Motor unit and action potential
- Neuromuscular adaptations to strength, power, and agility training
- Motor unit recruitment and firing patterns during exercise

2.3 Biochemical changes in muscles during exercise

- Muscle fatigue
- Fatigue mechanisms and neuromuscular fatigue during prolonged exercise

Suggested reading specific to the Module

2.1 Dey, S. K. (2012). *A Text Book of Sports and Exercise Physiology. New Delhi: Jaypee Brothers Medical Publishers.*

2.2 Haff, G.G., & Dumke, C. (2012). *Laboratory Manual for Exercise Physiology. USA: Human Kinetics.*

2.3 Maud, P.J., & Foster, C. (eds.) (2006). *Physiological Assessment of Human Fitness(2nded.). USA: Human Kinetics.*

2.4 Bruce M. Carlson (2014) - *The Human Body – Elsevier/Saunders*

2.5 Whiting W.C., & Rugg, S. (2006). *Dynatomy: dynamic human anatomy.*

Champaign, IL, Human Kinetics.

Module 3: Energy Metabolism

Hours of transaction:15

3.1 Nutrient requirements for physical activity.

- The role of macronutrients and micronutrients in exercise.

3.2 Concept of bioenergetics

- Role of different energy systems during exercise
- Overview of energy metabolism.
- ATP production and utilization.
- Fuel for muscular activity, second wind,
Role of oxygen and carbon dioxide exchange

3.3 Oxygen debt & EPOC

- Role of oxygen- physical training & oxygen debt
- Factors Influencing EPOC

Suggested reading specific to the Module

3.1 Louise Burke (2007) - *Practical Sports Nutrition – Human Kinetics*

3.2 Nancy Clark (2014) - *Nancy Clark's Sports Nutrition Guidebook, –Human Kinetics*

3.3 Melinda Manore, nanna L. Meyer, Janice Thompson (2009) *Sports Nutrition for Health and Performance – Human Kinetics*

3.4 Mc Ardle, W.D.; Katch, F.I. & Katch, V.L. (2010) *Exercise physiology- Nutrition, Energy, and human performance.7th edition. Philadelphia, Wolters Klnwerand Lippincott Williams & Wilkins.*

3.5 Dan Benardot (2011) - *Advanced Sports Nutrition – Human Kinetics, Incorporated*

Module 4 : Exercise and Endocrine System, Environmental factors & Ergogenic aids

Hours of transaction:10

4.1 Exercise and Endocrine System

- Hormonal responses to exercise.
- Role of key hormones in exercise adaptation.

4.2 Environmental and Temperature Regulation During Exercise

- Thermoregulation during exercise.
- Impact of environmental conditions on performance.
- Strategies and adaptations associated with altitude training

4.3 Ergogenic aids

- Doping
- Types of Ergogenic Aids (Pharmacological Agent, Mechanical Agent, Psychological Agent, Physiological Agent and Nutritional Agent),
- Effect of Ergogenic Aids on Sports Performance

Suggested reading specific to the Module

4.1 V Muruguvalan, *Anatomy and Physiology for Physical Education*

4.2 Brice M Carlson, *The Human Body*

4.3 A K Uppal and Vivek Chaudhary, *Health, Education, Anatomy and Physiology*

4.4 Nick Draper, *Exercise Physiology for Health and Sports Performance.*

Module 5 : Teacher Specific Module

Hours of transaction:10

- The respective teacher will prepare the module content, flexibly designing the material according to feasibility, prior modules, and pertinent information.

Core Compulsory Reading

- Kenney, W. L., Wilmore, J. H., & Costill, D. L. (2012). *Physiology of Sport and Exercise (5th ed.)*. USA: Human Kinetics.
- Plowman, S. A., & Smith, D. L. (2017). *Exercise Physiology for Health, Fitness and Performance (5th edn)*. Philadelphia: Wolters Kluwer.
- 3. Porcari, J., Bryant, C., & Comana, F. (2015) *Exercise Physiology*. USA: F A Davis.
- 4. Silverthorn, D. U. (2009). *Human Physiology: An Integrated Approach (4th ed.)* Pearson Education, USA.
- 5. Tanner, R.K., & Gore, C.J. (eds.) (2013)
- Louise Burke (2007) - *Practical Sports Nutrition – Human Kinetics*
- Nancy Clark (2014) - *Nancy Clark’s Sports Nutrition Guidebook, –Human Kinetics*
- Heather Fink, Alan Mikesky, Lisa Burgoon (2011) - *Practical Application in Sports Nutrition – Jones & Bartlett Learning*
- *Physiological tests for elite athletes (2nd ed.)*. USA: Human Kinetics.
- 6. Wingerd, B. (2014). *The Human Body: Concepts of Anatomy and Physiology (3rd ed.)*. Lippincott Williams & Wilkins
- B. N. Gupta (2008) - *The role of Anatomy and Physiology – Alfa Publications*
- Graham Thompson (2010) *Physical Education – Anatomy and Exercise Physiology – Hodder Education Group*
- Tommy Boone (2017) – *A pressing concern in Exercise Physiology Commitment to Professionalism – Bentham Science Publications*

Core Suggested Reading

- Rod R. Seeley, Trent D. Stephens, Philip Tate. (2007) - *Anatomy and Physiology – McGraw-Hill*
- Garg, K., Mittal, P. S., & Chandrupatla, M. (2016). *Human Anatomy (7th Edn)*. New Delhi: CBS Publishers.
- Waugh, A., & Grant, A. (2014). *Anatomy and physiology in health and illness (12th Edn)*. China: Churchill Livingstone Elsevier.

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- *Wingerd, B. (2014). The human body: Concepts of anatomy and physiology (3rd Edn). Baltimore: Wolters Kluwer.*
- *Netter, F. H. (2003). Atlas of human anatomy. New Jersey: Icon Learning Systems.*
Thibodeau, G. A., & Patton, K. T. (2003). Anatomy and physiology. St. Louis, Missouri: Elsevier.
- *Waugh, A., & Grant, A. (2010). Anatomy and physiology. Edinburgh: Elsevier.*

TEACHING LEARNING STRATEGIES

- The class will be taught by using lectures and demonstrations, seminars, classroom discussions, videos, charts, and presentation methods.

MODE OF TRANSACTION

- Lecture//Laboratory Work/ Field Work/ Outreach Activities/ Project Work/ Vocational Training/Viva/ Seminars/ Term Papers/Assignments/ Presentations/ Self-Study etc

ASSESSMENT RUBRICS

Evaluation Type		Marks
End Semester Evaluation		50
Continuous Evaluation		50
a)	Test Paper – 1 (Written/Oral)	10
b)	Test Paper – 2 (Written/Oral)	10
c)	Assignment Seminar Record Viva-Voce Any other relevant mode of evaluation	(Any three - each for 10 marks) 10 X 3 = 30 Marks
Total		100

Sample Questions to test Outcomes.

1. Explain the various lung volumes and capacities
2. Define and explain the term cardiac output and stroke volume
3. Explain in detail the glucose metabolism
4. What is sliding filament theory?

SEMESTER V

KU5DSCPES302: THEORY AND METHODOLOGY OF SPORTS TRAINING

Semester	Course Type	Course Level	Course Code	Credits	Total Hours
5	DSC	300	KU5DSCPES302	4	60

Learning Approach (Hours/ Week)			Marks Distribution			Duration of ESE (Hours)
Lecture	Practical/ Internship	Tutorial	CE	ESE	Total	
60	-	60	50	50	100	2hrs

Lecture/Tutorials, P/I=Practical/Internship, CE =Continuous Evaluation, ESE = End Semester Evaluation

Course Description

This course will enable students to understand the fundamental concept of sports training. It aims to develop an understanding of strength and conditioning, principles of sports training, technical and tactical training, training components, training periodization, training process, and design of various training plans and programs.

Course Outcomes: At the end of the course, the student will be able to

CO No.	Expected outcome	Learning Domains
CO1	Demonstrate a comprehensive understanding of the aims, characteristics principles, and variables of sports training, and systems involved in designing effective training programs.	R,U
CO2	Demonstrate a comprehensive understanding of the various components of physical fitness and their various forms and factors affecting and apply principles of different motor components to design and implement effective training programs	R,U,A
CO3	Define and differentiate between skill, technique, and style in sports performance, understanding their respective meanings and significance in athletic development.	R,U,A
CO4	Demonstrate a comprehensive understanding of periodization principles and methodologies, including different types of periodization and the contents appropriate for various training periods, with a focus on optimizing athlete preparation for peak performance during competitions.	A, AN,E,C

***Remember (R), Understand (U), Apply (A), Analyse (An), Evaluate (E), Create (C)**

Mapping of Course Outcomes to PSOs

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	✓	✓	✓		✓	
CO2	✓	✓	✓	✓	✓	
CO3		✓	✓	✓	✓	
CO4	✓	✓	✓		✓	✓

COURSE CONTENTS

Module 1: Introduction to Sports Training

Hours of transaction:10

1.1 Sports Training

- Aim and Characteristics
- Principles of Sports training.
- Training system & Components of a training system factors affecting training quality.

1.2 Variables of training

- Volume
- Intensity
- Relationship Between Volume and Intensity
- Density
- Complexity

1.3 Training Load and Recovery

- Definition and types of load and important features of training load.
- Principles of Training Load. Relationship between load, recovery and adaptation, conditions for adaptation & Super compensation.
- Overreaching and overtraining, causes and symptoms of overtraining, prevention of overtraining symptoms, treatment of overtraining.

Suggested readings specific to the Module

1.1 Dick FW (1999). *Sport training Principles*. A and C Black. London.

1.2 Newton H (2006). *Explosive lifting for sports*. Human Kinetics. US.

1.3 Singh Hardayal (1991). *Science of Sport Training*. D.V.S Pub. Delhi.

1.4 Haff, G., & Triplett, N. *Essentials of strength training and conditioning*. Champaign, IL.: Human Kinetics.

Module 2: Training for Development of Motor Components

Hours of transaction:10

- 2.1 Strength: Forms of strength, factors affecting strength, characteristics of strength, Principles of strength training, strength training means and methods.
- 2.2 Speed: Forms of speed, factors affecting speed, characteristics of speed, training means, and methods of improving speed.
- 2.3 Endurance: Forms of endurance, factors affecting endurance, characteristics of endurance, endurance training means, and methods of improving endurance.
- 2.4 Flexibility: Forms of flexibility, characteristics of flexibility, factors affecting flexibility, Methods of development of flexibility.
- 2.5 Coordinative Abilities: Characteristics of coordinative abilities, importance of coordinative abilities, classification of coordinative Abilities, Training means and methods.

Suggested readings specific to the Module

- 2.1 Haff, G., & Triplett, N. *Essentials of strength training and conditioning.* Champaign, IL.: Human Kinetics.
- 2.2 Baechle T R & Earle R W (2000). *Essentials of strength training and conditioning.* Human Kinetics. USA.
- 2.3 Bompa. T.O. (1994). *Theory and Methods of Training-A Key to Athletic Performance (3rd Ed.).* Kandwall Hunt Publication Co.
- 2.4 Zatsiorsky, V., & Kraemer, W. (2006). *Science and practice of strength training.* Champaign, IL: Human Kinetics.

Module 3: Skill, Style Technique and Tactics

Hours of transaction:15

- 3.1 Training for the development of Techniques, Tactics, and skills.
 - Definition and meaning of skill, technique, and style
 - Characteristics of the technique of skill, technique, and style
 - Phases and methods of skill acquisition
 - Development of the technique
- 3.2 Tactics
 - Definition of tactics and strategy
 - Basic Tactical concepts - offensive, defensive high performance,
 - Methods of tactical training, Control of tactical knowledge.
- 3.3 Talent identification
 - Identification and development of sports talent
 - Meaning, definition, and process of talent identification and its development.

Suggested readings specific to the Module

- 3.1 Bompa. T.O. and G. Gregory Hett. (2009) *Periodization: Theory and Methodology of Training.*
- 3.2 Bompa, T., & Carrera, M. (2005). *Periodization training for sports.* Champaign, Ill.: Human Kinetics.
- 3.3 Cart, E. Klafs & Daniel, D. Arnhem (1999) *Modern Principles of Athletic Training* St. Louis C. V. Mosphy Company
- 3.4 BeotraAlka, (2000), *Drug Education Handbook on Drug Abuse in Sports.* Delhi: Sports Authority of India.
- 3.5 Bunn, J.N. (1998) *Scientific Principles of Coaching, New Jersey Engle Wood Cliffs, Prentice Hall Inc.*

Module 4: Planning and Periodization

Hours of transaction:15

4.1Periodization

- Types of periodization, and Contents for various periods
- Peaking for competitions, tapering of training, methods of tapering, and factors affecting tapering.

4.2Training Cycles

- Macro cycle, Meso cycle, Micro Cycle
- One-day training program and planning of training sessions).

4.3Planning

- Importance of planning, Principal of planning, Systems of Planning, and planning of training load.
- Annual Training Plan Phases and Characteristics

Suggested readings specific to the Module

- 4.1 Bompa, T., & Haff, G. (2009). *Periodization. Champaign, IL.: Human Kinetics.ISBN-13: 9780736074834*
- 4.2 Baechle T R & Earle R W (2000). *Essentials of strength training and conditioning. Human Kinetics. USA.*
- 4.3 Bompa. T.O. (1994). *Theory and Methods of Training-A Key to Athletic Performance (3rd Ed.). Kandwall Hunt Publication Co.*

Module 5 : Teacher Specific Module

Hours of transaction:10

- The respective teacher will prepare the module content, allowing for adaptability in designing the material according to feasibility, prior modules, and pertinent information.

Core Compulsory readings

- BeotraAlka, (2000), *Drug Education Handbook on Drug Abuse in Sports.*

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Delhi: Sports Authority of India.

- Bunn, J.N. (1998) Scientific Principles of Coaching, New Jersey Engle Wood Cliffs, Prentice Hall Inc.
- Baechle T R & Earle R W (2000). Essentials of strength training and conditioning. Human Kinetics. USA.
- Bompa. T.O. (1994). Theory and Methods of Training-A Key to Athletic Performance (3rd Ed.). Kandwall Hunt Publication Co.
- Bompa, T., & Haff, G. (2009). Periodization. Champaign, IL.: Human Kinetics.ISBN-13: 9780736074834
- Bompa. T.O. and G. Gregory Hett. (2009) Periodization: Theory and Methodology of Training.
- Bompa, T., & Carrera, M. (2005). Periodization training for sports. Champaign, Ill.: Human Kinetics.
- Cart, E. Klafs& Daniel, D. Arnheim (1999) Modern Principles of Athletic Training St. Louis C. V. Mosphy Company
- Dick FW (1999). Sport training Principles. A and C Black. London
- Haff, G., & Triplett, N. Essentials of strength training and conditioning. Champaign, IL.: Human Kinetics.
- Singh Hardayal (1991). Science of Sport Training. D.V.S Pub. Delhi.
- Newton H (2006). Explosive lifting for sports. Human Kinetics. US.
- Zatsiorsky, V., & Kraemer, W. (2006). Science and practice of strength training. Champaign, IL: Human Kinetics.

Core suggested readings

- Wuest, D., & Fiset, J. (2014) Foundations of physical education, exercise science, and sport. McGraw-Hill Higher Education.
- Daniel, D. Arnheim (1991) Principles of Athletic Training, St. Luis, Mosby.

LIST OF PRACTICUMS

- To prepare a training plan (Session plan, days plan, micro cycle plan, mesocycle plan and macrocycle plan in different periods of training for various sports events)
- Evaluation of training (Testing of motor components and performance)

TEACHING LEARNING STRATEGIES

The subject will be taught by using lectures, demonstrations, seminars, classroom discussions, charts, and presentation methods.

MODE OF TRANSACTION

Lecture//Laboratory Work/Field Work/ Outreach Activities/Project Work/ Vocational Training/Viva/ Seminars/ Term Papers/Assignments/

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Presentations/ Self-Study etc.

ASSESSMENT RUBRICS

Evaluation Type		Marks
End Semester Evaluation		50
Continuous Evaluation		50
a)	Test Paper – 1 (Written/Oral)	10
b)	Test Paper – 2 (Written/Oral)	10
c)	Assignment Seminar Record Viva-Voce Any other relevant mode of evaluation	(Any three - each for 10 marks) 10 X 3 = 30 Marks
Total		100

Sample Questions to test Outcomes

- Define Strength describe the Forms of strength and the factors affecting strength
- Explain the theory of supercompensation
- What is periodization explain the types and features?
- What are training cycles?

SEMESTER V**KU5DSCPES303 :(P)–MAJOR GAMES (TRACK AND FIELD)**

Semester	Course Type	Course Level	Course Code	Credits	Total Hours
5	DSC	300	KU5DSCPES303	4	105

Learning Approach (Hours/ Week)			Marks Distribution			Duration of ESE (Hours)
Lecture	Practical/ Internship	Tutorial	CE	ESE	Total	
15	90	105	50	50	100	30 minutes per students

Lecture/Tutorials, P/I=Practical/Internship, CE =Continuous Evaluation, ESE = End Semester Evaluation

Course Description

The course of Practicum- track and field 300 level, is so designed to give an opportunity to the students to learn the advance skill in the field events. This course provides an overview of field events, including all jumping and throwing events. Students will learn about the specific drills, techniques, markings, rules and regulations associated with each event.

Course Outcomes: At the end of the course, the student will be able to

CO No.	Expected outcome	Learning Domains
CO1	Understand the markings of the track & field events	R,U
CO2	Understand the event-specific rules and regulations	R,U,A
CO3	Understand the rules regarding appeals and disputes	R,U,A,E
CO4	Perform the throws and the jumps at maximum distance within the designated throwing sector or the jumping area	A, An,E

***Remember (R), Understand (U), Apply (A), Analyse (An), Evaluate (E), Create (C)**

Mapping of Course Outcomes to PSOs

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	✓		✓		✓	
CO2	✓	✓	✓	✓	✓	
CO3	✓		✓	✓	✓	✓
CO4	✓	✓	✓		✓	✓

COURSE CONTENTS

Module 1: Techniques of throwing events (Shot put, discus throw, javelin throw, hammer throw)

Hours of transaction:30

- 1.1 Grip and release specific to the events
- 1.2 Proper stance and balance in the throwing circle
- 1.3 Lower body power generation drills and upper body strength and coordination drills
- 1.4 Follow throw and balance after release

Suggested Reading specific to the module

- 1.1 USA Track & Field (2015) - Track & Field Coaching Essentials – Human Kinetics
- 1.2 Jay Silvester (2003) Complete Book of Throws
- 1.3 Michael J Pellet. Track and Field Made Understandable: The Throwing Events: Practice Edition Paperback
- 1.4 Jay Silvester (2003) Complete Book of Throws

Module 2: Techniques of jumping events (Long jump, triple jump, high jump, pole vault)

Hours of transaction:30

- 2.1 Approach run
- 2.2 Take off techniques (foot placement and driving phase)
- 2.3 Flight phase technique
- 2.4 Landing technique

Suggested Reading specific to the module

- 2.1 Ed Jacoby, Bob Fraley (1995), Complete Book of Jumps
- 2.2 USA Track & Field (2015) - Track & Field Coaching Essentials – Human Kinetics
- 2.3 Gothi E (2004). Teaching & Coaching Athletics. Sport Pub., New Delhi.
- 2.4 Evans DA (1984). Teaching Athletics. Hodder, London.

Module 3: Track and Field layout and marking

Hours of transaction:30

- 3.1 Track surface, lanes
- 3.2 Start and finish lines, curves and straights, exchange zones
- 3.3 Measurement markings, field event areas, throwing circles and runways
- 3.4 Safety zones

Suggested Reading specific to the module

- 3.1 Gupta R. (2004). *Layout & Marking of Track & Field*. Friends Publications. India. New Delhi.
- 3.2 Dr. Baiju Abraham (2013). *Layout and Marking Of Track & Field*
- 3.3 Michael J Pellet. *Track and Field Made Understandable: The Throwing Events: Practice Edition Paperback*
- 3.4 Evans DA (1984). *Teaching Athletics*. Hodder, London

Module 4: Rules and officiating

Hours of transaction:15

- 4.1 Event-specific rules, starting procedures, and judging and measurement
- 4.2 Lane violations and foul regulations
- 4.3 Drug testing and anti-doping
- 4.4 Appeals and disputes

Suggested Reading specific to the module

- 4.1 *Handbook-Rules and Regulation*. International Athletic Federation (2010)
- 4.2 Gothi E (2004). *Teaching & Coaching Athletics*. Sport Pub., New Delhi.
- 4.3 Renwick GR (2001). *Play Better Athletics*. Sports Pub, Delhi.
- 4.4 Vanaik A. (2017). *Officiating and Coaching*, Friends Publication. New Delhi.

Core Compulsory Readings

1. Gupta R. (2004). *Layout & Marking of Track & Field*. Friends Publications. India. New Delhi.
2. *Handbook-Rules and Regulation*. International Athletic Federation (2010).
3. Eugene Shane Lee, Jeremiah Whitefield (2010) - *Fundamentals of Sprinting – A guide for Sprinters – Xlibris U S*
4. Graeme Foreman, Andy Bradshaw (2009) - *An Introduction to Fundamentals of Movement – Coachwise*
5. USA Track & Field (2015) - *Track & Field Coaching Essentials – Human Kinetics*
6. "Track and Field Coaching Essentials" by USA Track & Field

Core Suggested Readings

1. Vanaik A. (2017). *Officiating and Coaching*, Friends Publication. New Delhi.
2. Michael J Pellet. *Track and Field Made Understandable: The Throwing*

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Events: Practice Edition Paperback

TEACHING LEARNING STRATEGIES

- The content will be taught by using demonstration, explanation, presentation methods, videos, learning by doing, Whole part whole method Drills.

MODE OF TRANSACTION

- Practice of Techniques/ learning by doing/ Individual Practice etc.

ASSESSMENT RUBRICS

Evaluation Type		Marks
End Semester Evaluation		25
a)	Skill proficiency	15
b)	Record file	5
c)	Viva	5
Continuous Evaluation		25
a)	Skill proficiency	15
b)	Record file/Field Visit/Project Report	5
c)	Viva	5
Total		50

SEMESTER V

KU5DSCPES304: MAJOR GAMES (FOOTBALL)

Semester	Course Type	Course Level	Course Code	Credits	Total Hours
5	DSC	100	KU5DSCPES304	4	105

Learning Approach (Hours/ Week)			Marks Distribution			Duration of ESE (Hours)
Lecture	Practical/ Internship	Tutorial	CE	ESE	Total	
15	90	30	25	25	50	30 minutes per students

Course Description

The course of Practicum- football 100 level, is so designed to provide an opportunity to the students to learn the basic techniques of football

Course Outcomes: At the end of the course, the student will be able to

CO No.	Expected Outcome	Learning Domains
CO1	Understand the proper passing and techniques	R,U
CO2	Demonstrate various drills and exercises to improve the passing and receiving technique	U,A,
CO3	Understand the strategies of dribbling and kicking	R,U
CO4	Demonstrate the heading techniques, goalkeeping techniques and techniques in throw in	U,A,

***Remember(R), Understand(U), Apply(A), Analyse (An), Evaluate (E), Create(C), and Synthesis (Sy)**

Mapping of Course Outcomes to PSOs

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	✓	✓	✓			
CO2	✓	✓	✓	✓	✓	
CO3	✓	✓		✓		
CO4	✓	✓			✓	

COURSE CONTENTS

Module 1: Basics of feinting and tackling **Hours of Transaction: 30**

- 1.1 Fitness and conditioning routine for football specific stamina
- 1.2 Advanced techniques of passing and receiving
- 1.3 Understanding of feinting (with lower limb and upper part of the body)
- 1.4 Basics techniques of tackling(simple tackling, slide tackling)

Suggested Reading specific to the Module

- 1.1 Ditmer ,Warner Krutsch - Football Fitness Training: A Scientific Approach
- 1.2 Greg Gatz - Complete Conditioning for Soccer
- 1.3 American Football Coaches Association – The Football Coaching Bible

Module 2: Offensive skill development **Hours of Transaction: 30**

- 2.5 Basic techniques of shooting(volley, curls, chipping)
- 2.6 Principles of attacking
- 2.7 Goal scoring drills (1v1,2v2,1v2,2v3)
- 2.8 Advanced passing skills

Suggested Reading specific to module

- 2.1 Rick Trickett- Complete Offensive line
- 2.2 Buxton, Drewitt, Jim (2009)- Football Skill
- 2.3 Paul Mccord – 101 special Teams Drills
- 2.4 Lal D. C (2007) – Skill and Tactics football

Module 3: Defensive skill development **Hours of Transaction: 30**

- 3.1 Defensive positioning and marking
- 3.2 Principles of defending
- 3.3 Tackling techniques and drills
- 3.4 Pressing and interception strategies

Suggested Reading specific to module

- 3.1 Mark A. Schuster –Coaching the Defensive Secondary

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3.2 Jerry Tolley, Mack Brown – The Complete Book of Defensive Football Drills

3.3 Trimble, Allan (2000) – Coaching Football Successfully

3.4 Buxton, Drewitt, Jim (2009)- Football Skill

Module 4: Physical conditioning

Hours of Transaction: 15

- a. Football-specific fitness training
- b. Recovery strategies and injury prevention
- c. Importance of nutrition
- d. Small sided game

Suggested Reading specific to module

4.1 Luxbacher ,Joe – Chuck Myers, Mike Leach – The Complete Handbook of Coaching Wide Receiver

4.2 Utpal Ganguli- Coaching youth football: A comprehensive guide for Coaches of 6-11 year olds

4.3 Mcavoy, Nelson (1998) -Teaching Soccer Fundamentals

4.4 Drew Tallman- Football Coach's Guide to A high Scoring Passing Offense

4.5 Jerry Tolley, Mack Brown – The Complete Book of Defensive Football Drills

Core Compulsory Readings

4.1 Ditmer ,Warner Krutsch, Football Fitness Training: A Scientific Approach

4.2 Utpal Ganguli-Coaching youth football: A comprehensive guide for coaches of 6-11 year olds

4.3 Mcavoy, Nelson (1998) -Teaching soccer fundamentals

4.4 Greg Gatz .Complete Conditioning for Soccer

4.5 Lal D. C (2007) – Skill and Tactics football

TEACHING LEARNING STRATEGIES

- The content will be taught by using demonstration, explanation, presentation methods, videos, learning by doing, Whole part whole method Drills.

MODE OF TRANSACTION

- Practice of Techniques/ learning by doing/ Individual Practice etc.

ASSESSMENT RUBRICS

Evaluation Type		Marks
End Semester Evaluation		25
a)	Skill proficiency	15
b)	Record file	5
c)	Viva	5
Continuous Evaluation		25
a)	Skill proficiency	15
b)	Record file/Field Visit/Project Report	5
c)	Viva	5
Total		50

SEMESTER V

KU5DSEPE301: GENDER IN SPORTS AND PHYSICAL EDUCATION

Semester	Course Type	Course Level	Course Code	Credits	Total Hours
5	DSC	300	KU5DSEPE301	4	60

Learning Approach (Hours/ Week)			Marks Distribution			Duration of ESE (Hours)
Lecture	Practical/ Internship	Tutorial	CE	ESE	Total	
60	-	60	50	50	100	2hrs

Lecture/Tutorials, P/I=Practical/Internship, CE =Continuous Evaluation, ESE = End Semester Evaluation

Course Description

This course will orient the students about Gender and gender inequality in sports. It would orient the construction of gender and understand the patterns and constraints of gender inequality. The course will enable a review of policies and programs that work to close gender gaps, with a focus on developing countries. It will also orient the students towards inclusive education with the perspective of sports for a diverse population.

Course Outcomes: At the end of the course, the student will be able to

CO No.	Expected outcome	Learning Domains
CO1	Define and differentiate between gender, gender equality, and gender equity and analyze the role of gender-based violence in hindering development and violating human rights.	R,U
CO2	Examine gender dynamics within physical education classrooms and peer interactions and analyze how stereotypes and biases impact access to education.	R,U,A
CO3	Examine the prevalence and consequences of gender-based violence and harassment in sports and analyze gender disparities in opportunities for professional sports careers and endorsements.	R,U,A

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CO4	Demonstrate understanding of legal frameworks and global initiatives aimed at advancing gender equity in sports, assessing their effectiveness and implementation challenges.	A, An,E
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***Remember (R), Understand (U), Apply (A), Analyse (An), Evaluate (E), Create (C)**

Mapping of Course Outcomes to PSOs

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	✓		✓		✓	
CO2		✓	✓		✓	
CO3	✓	✓	✓	✓	✓	
CO4		✓	✓	✓	✓	✓

COURSE CONTENTS

Module 1: Understanding Gender in Sports and Physical Education

Hours of transaction: 10

1.1 Understanding Gender & Construction of Gender

- Conceptualizing the terms Gender, gender equality, and gender equity
- Distinguishing gender from sex
- Exploring features of gender inequality in education and sports
- Gender roles and female stereotypes in India

1.2 Gender-based violence

- Gender-based violence: The concept and types.
- The Role of Gender-Based Violence as an Impediment to Development and a Violation of Human Rights.
- Exploring strategies for addressing and preventing gender-based violence

1.3 Historical Roots of gender construction in India –patriarchy and its socio- cultural origins

- Gender as a social construct& major aspects of gender construct
- Historical Customs in India associated with Violence Against Women.
- Impact of gender as a social construct
- Examining historical and socio-cultural factors influencing gendered access to resources, opportunities, or rights.

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1.4 Intersectionality and Gender in Sports

- Examining how intersecting identities (race, class, sexuality, etc.) intersect with gender in sports and physical education
- Analysing the complexities of addressing multiple forms of discrimination in access and opportunities in society

Suggested readings specific to the Module

1.1 Cecilia L. Ridgeway (2013) *Gender, Interaction, and Inequality*

1.2 Bina Agarwal (2015) *Gender Challenges*

1.3 Elena Camilletti (2020) *Social Protection and Its Effects on Gender Equality A Literature Review*

1.4 Carol Vlassoff · (2013) *Gender Equality and Inequality in Rural India Blessed with a son*

1.5 Amy S. Wharton (2011) *The Sociology of Gender: An Introduction to Theory and Research*

Module 2: Gendered Perspectives on Access to Education, Physical education.

Hours of transactions: 6

2.1 Gender issues in access to education and Physical Education

- Gender issues in the physical education classroom and peer interactions
- Analysing barriers and challenges faced by individuals based on gender in accessing sports and physical education in educational institutions.
- Strategies to address the gender issues in education access and promote gender equality

2.2 Educational Institutions and Gender Inclusivity in Physical Education

- Analysing the role of educational institutions in promoting gender inclusivity in physical education
- Exploring strategies for creating inclusive curricula and environments

2.3 Gender and Constitution of India

- Major constitutional provisions for the education of women in India
- Important UEE programs and initiatives focused on the education of women in India
- Gender and policy perspective

Suggested readings specific to the Module

2.1 Elaine Unterhalter, Sheila Aikman (2007) *Practising Gender Equality in Education*

2.2 Dr. R. Rajalakshmi and Dr. C.E. Jayanthi (2019) *Gender, School and Society*

2.3 Greta L. Cohen (2001) *Women in Sport: Issues and Controversies*

2.4 Emily A. Roper (2014) *Gender Relations in Sport*

- 2.5 Lyndsay M.C. Hayhurst, Holly Thorpe, Megan Chawansky (2021) Sport, Gender and Development Intersections, Innovations and Future Trajectories

Module 3: Gender Representation and Participation in Sports

Hours of transaction:15

3.1 Gender inequality issues in a sports context

- Understanding the prevalence and consequences of gender-based violence and harassment in sports contexts
- Gender disparities in opportunities for professional sports careers and endorsements
- Gender Equity in Sports Governance
- Gendered Perspectives on Leadership and Coaching in Sports

3.2 Gender and Performance

- Gender Disparities in Athletic Performance Evaluation: Impact of stereotypes and expectations on performance evaluations
- Gendered Perspectives on Training and Conditioning: strategies for developing inclusive training approaches
- Identifying strategies for promoting gender-sensitive injury prevention and care
- Influence of societal norms and ideals of beauty on athletes' body image

3.3 Gender Representation in Sports Media

- Analysing portrayals of gender in sports media and their impact on participation and perceptions
- Exploring strategies for promoting more equitable representation
- Exploring the role of media, sponsors, and governing bodies in shaping gender dynamics in elite sports

Suggested readings specific to the Module

3.1 Cecilia L. Ridgeway (2013) Gender, Interaction, and Inequality

3.2 Bina Agarwal (2015) Gender Challenges

3.3 Elena Camilletti (2020) Social Protection and Its Effects on Gender Equality A Literature Review

3.4 Carol Vlassoff · (2013) Gender Equality and Inequality in Rural India Blessed with a Son

3.5 Amy S. Wharton (2011) The Sociology of Gender: An Introduction to Theory and Research

Module 4: Policy Perspectives and Institutional Change

Hours of transaction:10

4.1 Legal Frameworks for Gender Equity in Sports

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- Examining national and international policies and legislation promoting gender equity in sports
- Global Initiatives for Gender Equity in Sports
- Assessing gaps and challenges in implementation
- 4.2 Empowering Women and Girls through Sports**
- Investigating initiatives and programs aimed at empowering women and girls through sports
- Assessing the impact of sports participation on broader gender equality goals
- Engaging Communities for Gender Equity in Sports
- 4.3 LGBTQ+ Inclusion in Sports**
- Gender Testing and Its Implications: History and controversies surrounding gender testing in sports
- Examining the impact of gender testing on athletes' rights and experiences
- Exploring challenges and opportunities for LGBTQ+ individuals in sports
- National and international policies promoting LGBTQ+ inclusion in sports
- Intersecting identities (race, class, disability, etc.) intersect with LGBTQ+ identity in sports and strategies for addressing multiple forms of discrimination

Suggested readings specific to the Module

- 4.1 Elaine Unterhalter, Sheila Aikman (2007) Practising Gender Equality in Education
- 4.2 Dr. R. Rajalakshmi and Dr. C.E. Jayanthi (2019) Gender, School and Society
- 4.3 Greta L. Cohen (2001) Women in Sport: Issues and Controversies
- 4.4 Emily A. Roper (2014) Gender Relations in Sport
- 4.5 Lyndsay M.C. Hayhurst, Holly Thorpe, Megan Chawansky (2021) Sport, Gender and Development Intersections, Innovations and Future Trajectories

Module 5 : Teacher Specific Module

Hours of transaction:10

- The respective teacher will prepare the module content, allowing for adaptability in designing the material according to feasibility, prior modules, and pertinent information.

Core Compulsory readings

- Erik Olin Wright, "From Paradigm Battles to Pragmatist Realism: towards an integrated class analysis", New Left Review (forthcoming)
- Daryl Glaser, "Class as a Normative Category: Egalitarian Reasons to Take It Seriously (With a South African Case Study)
- Daryl Glaser, 'Should An Egalitarian Support Black Economic Empowerment?', Politikon, vol. 34, no. 2, 105-123,

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2007.

- John Roemer paper: "Should Marxist's care about exploitation" in Analytical Marxism and Philosophy & public affairs 1985
- Michael Marmot, Richard Wilkinson, Social Determinants of Health: The Solid Facts
- Gomberg, How to make opportunity equal (Blackwell, 2007)
- Ainscow, M., Booth. T (2003): The Index for Inclusion: Developing Learning and Participation in Schools. Bristol: Center for Studies in Inclusive Education.
- Ahuja. A, Jangira, N.K. (2002): Effective Teacher Training; Cooperative Learning Based Approach: National Publishing house 23 Daryaganj, New Delhi 110002.
- Jangira N.K. and Mani, M.N.G. (1990): Integrated Education for Visually Handicapped, Gurgaon, Old Subjimandi, Academic Press.

Core suggested readings

- Jha. M.(2002) Inclusive Education for All: Schools Without Walls, Heinemann Educational publishers, Multivista Global Ltd, Chennai, 600042, India.
- Sharma, P.L. (1990) Teachers handbook on IED-Helping children with special needs N. C. E R T Publication.
- Sharma P.L (2003) Planning Inclusive Education in Small Schools, R .I E. Mysore

TEACHING LEARNING STRATEGIES

The subject will be taught by using lectures and demonstration, seminars, classroom discussion, videos, charts and presentations method.

MODE OF TRANSACTION

Lecture//Laboratory Work/ Field Work/ Outreach Activities/ Project Work/ Vocational Training/Viva/ Seminars/ Term Papers/Assignments/ Presentations/ Self-Study etc

ASSESSMENT RUBRICS

Evaluation Type		Marks
End Semester Evaluation		50
Continuous Evaluation		50
a)	Test Paper – 1 (Written/Oral)	10
b)	Test Paper – 2 (Written/Oral)	10
c)	Assignment Seminar Record Viva-Voce Any other relevant mode of evaluation	(Any three - each for 10 marks) 10 X 3 = 30 Marks
Total		100

Sample Questions to test Outcomes.

- Discuss the gender disparity in the Indian education system
- What do you mean by gender as a social construct?
- Discuss how we can improve the quality of physical education classrooms to make it more gender sensitive
- Discuss the constitutional provisions in India that promote the education of women, emphasizing the Right to Education and non-discrimination.

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SEMESTER V

KU5DSEPES302: ETHICS AND INTEGRITY IN SPORTS

Semester	Course Type	Course Level	Course Code	Credits	Total Hours
5	DSC	300	KU5DSEPES302	2	30

Learning Approach (Hours/ Week)			Marks Distribution			Duration of ESE (Hours)
Lecture	Practical/ Internship	Tutorial	CE	ESE	Total	
30	-	30	50	50	100	1 hour

Lecture/Tutorials, P/I=Practical/Internship, CE =Continuous Evaluation, ESE = End Semester Evaluation

Course Description

The course is intended to offer students a comprehensive learning experience, enabling them to develop a profound understanding of the ethical considerations that form the foundation of sports. These considerations encompass concepts such as fair play, integrity, respect, and justice in sports participation.

Course Outcomes: At the end of the course, the student will be able to

CO No.	Expected outcome	Learning Domains
CO1	Understand foundational ethical theories and frameworks in sports and their application to sports and physical education contexts	R,U
CO2	Demonstrate awareness of the ethical responsibilities of athletes, coaches, educators, and sports organizations.	R,U,A
CO3	Ethical Considerations in Sports Governance & and Media Influence	R, U,A
CO4	Understand the significance of inclusion in sports and how to create an inclusive environment.	U,A, An

***Remember (R), Understand (U), Apply (A), Analyse (An), Evaluate (E), Create (C)**

Mapping of Course Outcomes to PSOs						
	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	✓		✓	✓	✓	✓
CO2	✓		✓		✓	
CO3	✓	✓	✓	✓	✓	
CO4	✓	✓	✓	✓	✓	

COURSE CONTENTS

**Module 1: Introduction to Sports Ethics
transaction:6**

Hours of

- 1.1 Understanding Ethics and its Application in Sports
- 1.2 Ethical Theories and Frameworks in Sports
- 1.3 Define social responsibility in the context of sports ethics.
- 1.4 Examine the concept of fair play and its role in sportsmanship.

Suggested reading Specific to the Module

- 1.1 Simon, R. L. (Ed.). (2014). *Fair Play: The Ethics of Sport*. Westview Press
- 1.2 Shields, D. L. L., & Bredemeier, B. J. (Eds.). (2009). *Sport Ethics: Applications for Fair Play*. University of Illinois Press.

Module 2: Ethics in Competition and Performance Enhancement

Hours of transaction:6

- 2.1 Ethical Challenges in Competition and Performance Enhancement
- 2.2 Sportsmanship over Winning at All Costs
- 2.3 Performance-Enhancing Drugs and Ethical Implications
- 2.4 Structure, composition, and functions of NADA&WADA

Suggested reading Specific to the Module

- 2.1 Weiss, M. R. (Ed.). (2016). *Developmental Sport and Exercise Psychology: A Lifespan Perspective*. Routledge
- 2.2 Murray, T. H., & Maschke, K. J. (Eds.). (2009). *Performance-Enhancing Technologies in Sports: Ethical, Conceptual, and Scientific Issues*. Johns Hopkins University Press.
- 2.3 Yesalis, C. E. (2000). *Anabolic steroids in sport and exercise (2nd ed.)*. Human Kinetics.

Module 3: Ethical Considerations in Sports Governance & and Media Influence

Hours of transaction: 6

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- 3.1 Corruption and Fair Play in Sports Organizations
- 3.2 Athlete Exploitation and Commercialization
- 3.3 Explore ethical challenges in sports media, reporting, and communication.
- 3.4 Analyse the impact of media on athletes' behavior and public perception

Suggested reading Specific to the Module

- 3.1 Real, M. R. (2012). *Super Media: A Cultural Studies Approach*. Routledge.
- 3.2 Hutchins, B., Rowe, D., & Pfeffer, N. (Eds.). (2012). *Digital Media Sport: Technology, Power, and Culture in the Network Society*. Routledge
- 3.3 Walsh, J. P., & Giulianotti, R. (Eds.). (2007). *Ethics, Money, and Sport: This Sporting Mammon*. Routledge.

Module 4: Inclusion, Diversity, and Social Responsibility

Hours of transaction:6

- 4.1 Examine ethical considerations related to diversity, inclusion, and social justice in sports.
- 4.2 Discuss strategies for promoting equal opportunities and addressing discrimination.
- 4.3 Address specific health needs and considerations of female athletes
- 4.4 Respecting Gender Identity and Expression of all athletes and Prioritize the inclusivity and fairness of nonbinary athletes

Suggested readings specific to the Module

- 4.1 Kidd, B., & Rodriguez, A. B. (Eds.). (2021). *Sportswomen and feminism: Global issues and perspectives*. Routledge.
- 4.2 Eassom, S. (2017). *Equality and sport: A critical and interdisciplinary analysis*. Routledge.
- 4.3 Sabo, D., Jansen, S. C., & Tate, T. F. (Eds.). (2004). *Sport, sexualities, and queer/theory*. Routledge.

Module 5 : Teacher Specific Module

Hours of transaction:6

- The respective teacher will prepare the module content, allowing for adaptability in designing the material according to feasibility, prior modules, and pertinent information.

Core Compulsory reading

- Simon, R. L. (Ed.). (2014). *Fair Play: The Ethics of Sport*. Westview Press
- Houlihan, B. (Ed.). (2003). *Sport, Policy, and Politics: A Comparative Analysis*. Routledge
- Yesalis, C. E. (2000). *Anabolic steroids in sport and exercise (2nd ed.)*. Human Kinetics
- Mottram, D. R., & Chester, N. (Eds.). (2016). *Drugs in Sport (7th*

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ed.). Routledge

- Sabo, D., Jansen, S. C., & Tate, T. F. (Eds.). (2004). *Sport, sexualities, and queer/theory*. Routledge

Core suggested readings

- Lumpkin, A., & Stoll, S. K. (2018). *Teaching Responsibility Through Physical Activity (3rd ed.)*. McGraw-Hill Education
- Hargreaves, J. (2010). *Sport, Power and Society: Institutions and Practices: A Reader*. Routledge.
- Birrell, S., & Cole, C. L. (Eds.). (2007). *Women, sport, and culture. Human Kinetics*.

TEACHING LEARNING STRATEGIES

- The class will be taught by using lectures and demonstrations, seminars, classroom discussion, videos, charts and presentations method.

MODE OF TRANSACTION

- Lecture//Laboratory Work/ Field Work/ Outreach Activities/ Project Work/ Vocational Training/Viva/ Seminars/ Term Papers/Assignments/ Presentations/ Self-Study etc.

ASSESSMENT RUBRICS

Evaluation Type		Marks
End Semester Evaluation		50
Continuous Evaluation		50
a)	Test Paper – 1 (Written/Oral)	10
b)	Test Paper – 2 (Written/Oral)	10
c)	Assignment Seminar Record Viva-Voce Any other relevant mode of evaluation	(Any three - each for 10 marks) 10 X 3 = 30 Marks
Total		100

Sample Questions to test Outcomes.

- Define social responsibility in the context of sports ethics
- Examine ethical considerations related to diversity, inclusion, and social justice in sports.
- Analyse the impact of media on athletes' behaviour and public perception

SEMESTER V

KU5DSEPES303: SOCIOLOGY OF SPORTS

Semester	Course Type	Course Level	Course Code	Credits	Total Hours
5	DSC	300	KU5DSEPES303	3	45

Learning Approach (Hours/ Week)			Marks Distribution			Duration of ESE (Hours)
Lecture	Practical/ Internship	Tutorial	CE	ESE	Total	
45	-	45	50	50	100	2 hrs

Lecture/Tutorials, P/I=Practical/Internship, CE =Continuous Evaluation, ESE = End Semester Evaluation

Course Description

This course explores the intersection of sports and society, examining the role of sports in shaping individual identities, social structures, and cultural practices. It covers a range of topics from historical development of sociology of sports, sports and globalization, sports media and representation and sports and health

Course Outcomes: At the end of the course, the student will be able to

CO No.	Expected outcome	Learning Domains
CO1	Understand the Historical development of sociology of sports	R,U
CO2	Understand the commercialization of sports and its impact on media coverage	R,U,A
CO3	Understand the body image, eating disorders	K,U,A
CO4	Understand the social construction of health and fitness	U,A, An

***Remember (R), Understand (U), Apply (A), Analyse (An), Evaluate (E), Create (C)**

Mapping of Course Outcomes to PSOs

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	✓	✓	✓			
CO2	✓	✓	✓		✓	
CO3		✓	✓		✓	
CO4		✓	✓		✓	✓

COURSE CONTENTS

Module 1: Introduction to Sociology of Sports **Hours of transaction:10**

- 1.1 Historical Development of sociology of Sports
- 1.2 Methodological approaches to studying sports and society
- 1.3 Social mobility and barriers to entry in sports
- 1.4 Deviance and violence in sports crowds

Suggested Reading specific to the module

- 1.1 Richard Giulianotti (2015). *Routledge Handbook of the Sociology of Sport*. Taylor & Francis
- 1.2 Earl Smith (2010) *Sociology of Sport and Social Theory*. Human Kinetics
- 1.3 Tim Delaney, Tim Madigan (2021). *The Sociology of Sports. An Introduction, 3d Ed.* McFarland, Incorporated, Publishers
- 1.4 Coakly, J.J. (2009). *Sporting Sociology, Issues and controversies*, Mcgraw Hill International

Module 2: Sports and Globalization **Hours of transaction:10**

- 2.1 Globalization of sports: Olympics, FIFA World Cup, and other mega-events
- 2.2 Transnational flows of athletes, media, and capital
- 2.3 Cultural imperialism and resistance in global sports
- 2.4 Governing bodies, regulations, and accountability

Suggested Reading specific to the module

- 2.1 Mark Falcoux, Joseph Maguire, Katie Liston (2021). *The Palgrave Handbook of Globalization and Sport*.:Palgrave Macmillan UK Publisher
- 2.2 Steven J. Jackson, Steven Haigh (2013). *Sport and Foreign Policy in a Globalizing World*. Taylor & Francis
- 2.3 Toby Miller (2001). *Globalization and Sport. Playing the World*.

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SAGE Publications

- 2.4** Alan Bairner (2001). *Sport, Nationalism, and Globalization. European and North American Perspectives.* State University of New York Press Publisher

Module 3: Sports Media and Representation **Hours of transaction:10**

- 3.1** Media representations of athletes, teams, and events
3.2 Commercialization of sports and its impact on media coverage
3.3 Alternative media and grassroots sports journalism
3.4 Deviance and violence in sports crowds

Suggested Reading specific to the module

- 3.1** Aamidor A (2003). *Real Sports Reporting.* Indiana University Press. Valparaiso. Indiana. U.S.A.
3.2 Billings, A. (2014) *Routledge handbook of sport and new media.* Routledge ISBN-13: 978-0415532761 ISBN-10: 0415532760.
3.3 Aamidor A (2003). *Real Sports Reporting.* Indiana University Press. Valparaiso. Indiana. U.S.A.
3.4 Billings, A., Butterworth, M., & Turman, P.(2014) *Communication and sport.* ISBN-13: 978-1452279138 ISBN-10: 1452279136

Module 4: Sports and Health **Hours of transaction:05**

- 4.1** Social determinants of physical activity and sports participation
4.2 Body image, eating disorders
4.3 Performance-enhancing drugs
4.4 The social construction of health and fitness norms in sports

Suggested Reading specific to the module

- 4.1** Maguire, J., & Falcous, M. (2010). *Sociology of Sport and Physical Activity.*
4.2 W.Larry Kenney, Jack H. Wilmore, Devid L.Costil.(2015). *Physiology of Sports and Exercise, Second Edition.* USA.Human Kinetics.
4.3 W.Larry Kenney, Jack H. Wilmore, Devid L.Costil.(2015). *Physiology of Sports and Exercise, Second Edition.* USA.Human Kinetics.
4.4 Coaklay, J.J. (2009). *Sporting Sociology, Issues and controversies,* Mcgraw Hill International

Module 5 : Teacher Specific Module **Hours of transaction:10**

- The respective teacher will prepare the module content, allowing for adaptability in designing the material according to feasibility, prior modules, and pertinent information.

Core Compulsory Readings

1. Richard Giulianotti (2015). *Routledge Handbook of the Sociology of Sport.* Taylor & Francis.
2. Earl Smith (2010) *Sociology of Sport and Social Theory.* Human Kinetics

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3. Tim Delaney, Tim Madigan (2021).The Sociology of Sports. An Introduction, 3d Ed. McFarland, Incorporated, PublishersCoaklay, J.J. (2009). Sporting Sociology, Issues and controversies, Mcgraw Hill International
4. Maguire, J., & Falcous, M. (2010). Sociology of Sport and Physical Activity.
5. Coaklay, J.J. (2009). Sporting Sociology, Issues and controversies, Mcgraw Hill International
6. W.Larry Kenney, Jack H. Wilmore, Devid L.Costil.(2015). Physiology of Sports and Exercise, Second Edition. USA.Human Kinetics.

Core Suggested Readings

1. Messner, M. A., & Sabo, D. F. (Eds.). (2010). Sport, Men, and the Gender Order: Critical Feminist Perspectives.
2. Ahuja, B.N (1988) Theory and Practice of Journalism. Surjeet Delhi.
3. Andrews P (2005). Sports Journalism: A Practical Introduction. Sage Publications Ltd. Delhi.
4. Dixit S (2006). Khel- Manovigyan. Sports Publications. Delhi
5. Coakley, J. (2018). Sports in Society: Issues and Controversies.
6. Giulianotti, R. (2015). Sport: A Critical Sociology.
7. Dunning, E., & Maguire, J. (2010). The Sports Process: A Comparative and Developmental Approach.

TEACHING LEARNING STRATEGIES

- The class will be taught by using lectures and demonstration, seminars, classroom discussion, videos, charts and presentations method.

MODE OF TRANSACTION

- Lecture//Laboratory Work/ Field Work/ Outreach Activities/ Project Work/ Vocational Training/Viva/ Seminars/ Term Papers/Assignments/ Presentations/ Self-Study etc.,

ASSESSMENT RUBRICS

Evaluation Type		Marks
End Semester Evaluation		50
Continuous Evaluation		50
a)	Test Paper – 1 (Written/Oral)	10
b)	Test Paper – 2 (Written/Oral)	10
c)	Assignment Seminar Record Viva-Voce Any other relevant mode of evaluation	(Any three - each for 10 marks) 10 X 3 = 30 Marks

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Total	100
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Sample Questions to test Outcomes.

1. Analyze the role of media in shaping perceptions of sports and athletes
2. Explore the relationship between sports and nationalism
3. Discuss the relationship between sports and education
4. Discuss the gendered aspects of body image and eating disorders

SEMESTER VI

KU6DSCPES305: SPORTS NUTRITION-THEORY AND PRACTISE

Semester	Course Type	Course Level	Course Code	Credits	Total Hours
6	DSC	300	KU6DSCPES305	4	60

Learning Approach (Hours/ Week)			Marks Distribution			Duration of ESE (Hours)
Lecture	Practical/ Internship	Tutorial	CE	ESE	Total	
60	-	60	50	50	100	2hrs

Lecture/Tutorials, P/I=Practical/Internship, CE =Continuous Evaluation, ESE = End Semester Evaluation

Course Description

This course provides a comprehensive understanding of the principles of human nutrition and their application in the context of sports nutrition. Covering essential topics such as macronutrients, micronutrients, hydration, dietary planning, performance optimization, and weight management, this course equips participants with the knowledge and skills necessary to support athletes in achieving their nutritional goals for peak performance

Course Outcomes: At the end of the course, the student will be able to

CO No.	Expected outcome	Learning Domains
CO1	Understanding of the fundamental concepts of human nutrition, including the roles and classifications of nutrients, the concept of a balanced diet, the functions and metabolism of macronutrients and micronutrients, as well as the regulation of water balance within the body.	R,U
CO2	Demonstrate understanding of nutritional guidelines and recommendations in diet plan preparation according to Recommended Dietary Allowances (RDAs) and Dietary Reference Intakes (DRIs).	R,U,A

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CO3	Understand the various strategies to optimize nutrition for enhanced athletic performance	R,U,A
CO4	Understand the concepts of body composition and body weight and weight management strategies on athletic performance	A, An

***Remember (R), Understand (U), Apply (A), Analyse (An), Evaluate (E), Create (C)**

Mapping of Course Outcomes to PSOs

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1			✓			
CO2		✓	✓			
CO3		✓		✓	✓	
CO4	✓	✓	✓	✓	✓	✓

COURSE CONTENTS

Module 1: Sports Nutrition- Macro & Micronutrients

Hours of transaction: 10

1.1 Introduction to Sports Nutrition

- Definition and importance of sports nutrition
- Overview of macronutrients and micronutrients
- Concept of Balanced diet.
- Dietary guidelines for athletes

1.2 Macronutrients: Carbohydrates & Proteins & fats

- Classification and functions, sources, of macronutrients
- Digestion, absorption, and metabolism of macronutrients of macronutrients
- Carbohydrate requirements for different types of athletes
- Protein requirements for athletes and timing of consumption
- Types of fats and their impact on athletic performance
- Recommendations for fat intake in athletes

1.3 Micronutrients: Vitamins and Minerals

- Importance of vitamins and minerals in sports performance
- Micronutrient deficiencies and their impact on athletic health
- Dietary sources and recommended intake of key vitamins and minerals for athletes

1.4 Hydration and Electrolytes

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- Role of hydration in athletic performance and recovery
- Fluid balance and electrolyte needs during exercise
- Strategies for optimizing hydration before, during, and after physical activity

Suggested readings specific to the module.

1.1 Nitika Thareja (2021) - *The Balanced Diet: Healthy*

1.2 Alice Callahan, Heather Leonard, Tamberly Powell (2020) - *Nutrition: Science and Everyday Application – Open Oregon Educational Resources*

1.3 Horace A. Howard (2021). *Micronutrients and Their Role in Health and Disease*. Nova Science Publishers

1.4 Flavia Meyer, Zbigniew Szygula, Boguslaw Wilk (2016). *Fluid Balance, Hydration, and Athletic Performance*. CRC Press Publisher

Module 2: Nutritional Guidelines and Recommendations

Hours of transaction: 15

2.1 Science of Sports Nutrition

- Definition of Sports Nutrition
- Importance and Need for Sports Nutrition
- Recommended Dietary Allowances (RDAs)

2.2 Dietary Reference Intakes (DRIs)

- Overview of DRIs
- Estimated Average Requirement (EAR)
- Adequate Intake (AI)

2.3 Dietary Guidelines

- Dietary Guidelines for Reference Men and Reference Women
- Overview of Food Guide Pyramid
- Introduction to MyPlate
- Understanding Food Labels

2.4 Eating disorders and disordered eating in athletes:

- Disordered eating classifications
- Performance and health consequences of disordered eating
- Prevention and management of disordered eating among athletes

Suggested readings specific to the module.

2.1 Robert E.C. Wildman, Barry S. Miller, (2004), "Sports and Fitness Nutrition", Thomson.

2.2 Bean, Anitha (2006), 5th ed, Sports Nutrition

2.3 Burke, Louise (2007), *Practical Sports Nutrition, Human Kinetics*.

2.4 Dan Benardot (2011) - *Advanced Sports Nutrition – Human Kinetics, Incorporated*

Module III: Nutrition for Sports Competition

Hours of transaction: 15

3.1 Preparation for Competition

- Nutrition Factors Causing Fatigue During Performance
- Pre-Event Fuelling Strategies Fuelling during the event

3.2 Muscle Glycogen Storage and Carbohydrate Loading

- Carbohydrate Loading for Endurance Events
- Pre-Exercise Carbohydrate Consumption and Glycaemic Index
- Pre-Exercise Hydration and Salt Loading

3.3 Nutrition for Recovery After Training and Competition

- Factors in Post-Exercise Glycogen Storage
- Concept of the nutritional window for dietary intake
- Guidelines for Carbohydrate Intake for Training and Recovery
- Training with Low Carbohydrate Availability
- Issues in Post-Exercise Rehydration

3.4 Overview of Supplements and Sports Foods

- Regulation of Supplements and Sports Foods
- Pros and Cons of Using Supplements and Sports Foods

Suggested readings specific to the module

3.1 Heather Hedrick Fink, Alan E. Mikesky (2020) - *Practical Application in Sports Nutrition*- Jones & Bartlett Learning, LLC

3.2 Anita Bean (2013) - *The Complete Guide to Sports Nutrition* - Bloomsbury Publishing

3.3 Bill Campbell (2013) - *Sports Nutrition: Enhancing Athletic Performance* Taylor & Francis

3.4 Benardot, Don (2000), *Advanced Sports Nutrition, Human Kinetics.*

Module IV: Diet, Weight Management and Performance

Hours of transaction: 15

4.1 Regulation of Body Weight and Composition

- Genetic Influences on Body Weight and Composition
- Hormonal Influences on Body Weight and Composition

4.2 Energy Balance and Weight Management

- Understanding Positive Energy Balance
- Understanding Negative Energy Balance
- Strategies for Diet, Exercise, and Weight Management

4.3 Weight Management Strategies for Athletes

- Weight Loss Methods for Athletes
- Healthful Weight Gain Strategies for Athletes
- Vegetarian Diets and Athletic Performance

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4.4 Special Eating Plans and Their Impact on Performance

- Overview of Special Eating Plans
- Paleo Diet and Athletic Performance
- Raw Food Diet and Athletic Performance
- Detox Diet and Athletic Performance
- Low Carbohydrate and High Fat (LCHF) Diet and Athletic Performance
- Evaluation of Other Diets and Their Effects on Athletic Performance

Suggested readings specific to the module.

4.1 Eberle, S. G. (2013). *Endurance Sports Nutrition, 3E. Human Kinetics.*

4.2 Ryan, M. (2012). *Sports nutrition for endurance athletes. Velo Press.*

4.3 Campbell, B. (Ed.). (2013). *Sports nutrition: enhancing athletic performance.*
CRC 22 Press.

4.4 Reaburn, P. R. (Ed.). (2014). *Nutrition and Performance in Masters Athletes.*
CRC Press.

Module 5: Teacher Specific Module

Hours of transaction: 05

- Discussion on common myths and misconceptions about sports nutrition
- Preparation of athlete's food composition tables, hydration guidelines, athletes dietary preferences and restrictions.
- Preparation of one week meal plan for the athlete
- Any other practicum related content will be evaluated

Core Compulsory Readings

- Maughan, R. J. (Ed.). (2008). *Nutrition in sport (Vol. 7).* John Wiley & Sons.
- Fink, H. H., & Mikesky, A. E. (2017). *Practical applications in sports nutrition.* Jones & Bartlett Learning.
- Eberle, S. G. (2013). *Endurance Sports Nutrition, 3E. Human Kinetics.*
- Ryan, M. (2012). *Sports nutrition for endurance athletes. Velo Press.*
- Campbell, B. (Ed.). (2013). *Sports nutrition: enhancing athletic performance.* CRC 22 Press.
- Reaburn, P. R. (Ed.). (2014). *Nutrition and Performance in Masters Athletes.* CRC Press.
- Slater, G., & Phillips, S. M. (2011). *Nutrition guidelines for strength sports: sprinting, weightlifting, throwing events, and bodybuilding.* *Journal of sports sciences*, 29(sup1), S67-S77.
- Christoph Zinner and Billy Sperlich. (2016). *Marathon Running: Physiology, Psychology, Nutrition and Training Aspects*
- Louise Burke (2007) - *Practical Sports Nutrition – Human Kinetics*

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- Nancy Clark (2014) - Nancy Clark's Sports Nutrition Guidebook, - Human Kinetics
- Heather Fink, Alan Mikesky, Lisa Burgoon (2011) - Practical Application in Sports Nutrition – Jones & Bartlett Learning
- Melinda Manore, nanna L. Meyer, Janice Thompson (2009) Sports Nutrition for Health and Performance – Human Kinetics

Core Suggested Readings

- Burke, Louise, and Vicki Deakin. (2015). Clinical sports nutrition. McGraw-Hill.
- Broad, E. (Ed.). (2014). Sports Nutrition for Paralympic Athletes. CRC Press.
- Maughan, R. J., & Shirreffs, S. M. (Eds.). (2013). Food, Nutrition and Sports Performance III. Routledge.
- Campbell, B. (Ed.). (2013). Sports nutrition: enhancing athletic performance. CRC Press.
- Larson-Meyer, D. E. (2007). Vegetarian sports nutrition. Human Kinetics.
- Marie Dunford. (2017) Nutrition for Sport and Exercise.
- LeMura, L. M., & Von Duvillard, S. P. (Eds.). (2004). Clinical exercise physiology: application and physiological principles. Lippincott Williams & Wilkins.
- Cheung, S. (2010). Advanced environmental exercise physiology. Human Kinetics.
- Emmanuel A. Andreadis - Hypertension and Cardiovascular diseases – Springer International Publishing
- Deakin, Burke(2006), 3rd, Clinical Sports Nutrition, McGraw- Hill Austria.
- Bourns, Fred (ed), Essentials of Sports Nutrition, 2nd Ed (2002), John and Wiley.
- Benardot, Don (2000), Advanced Sports Nutrition, Human Kinetics.
- Burke, Louise (2007), Practical Sports Nutrition, Human Kinetics.
- Gleeson, Jeukendrup (2004), Sports Nutrition: an introduction to energy production and performance, Human Kinetics.

TEACHING LEARNING STRATEGIES

The class will be taught by using lectures and demonstrations, seminars, classroom discussions, videos, charts and presentation methods.

MODE OF TRANSACTION

Lecture//Laboratory Work/ Field Work/ Outreach Activities/ Project Work/ Vocational Training/Viva/ Seminars/ Term Papers/Assignments/ Presentations/ Self- Study etc

ASSESSMENT RUBRICS

Evaluation Type		Marks
End Semester Evaluation		50
Continuous Evaluation		50
a)	Test Paper – 1 (Written/Oral)	10
b)	Test Paper – 2 (Written/Oral)	10
c)	Assignment Seminar Record Viva-Voce Any other relevant mode of evaluation	(Any three - each for 10 marks) 10 X 3 = 30 Marks
Total		100

Sample Questions to test Outcomes.

1. What are the key macronutrients athletes need to prioritize in their diet, and why are they important for performance?
2. How does hydration affect athletic performance, and what are some strategies for maintaining proper hydration during exercise?
3. What role do carbohydrates play in sports nutrition, and how should athletes adjust their intake based on training intensity and duration?
4. Why is protein important for athletes, and what are some sources of high-quality protein for muscle repair and growth?

SEMESTER VI**KU6DSCPES306: SPORTS PSYCHOLOGY**

Semester	Course Type	Course Level	Course Code	Credits	Total Hours
6	DSC	300	KU6DSCPES306	4	75

Learning Approach (Hours/ Week)			Marks Distribution			Duration of ESE (Hours)
Lecture	Practical/ Internship	Tutorial	CE	ESE	Total	
45	30	75	50	50	100	2 hrs

Lecture/Tutorials, P/I=Practical/Internship, CE =Continuous Evaluation, ESE = End Semester Evaluation

Course Description

This course will enable students to understand the psycho-sociological aspects of human behavior in relation to physical education and sports. It aims to develop understanding about the general characteristics of various stages of growth and development, types and nature of individual differences, nature of learning, theories of learning, laws of learning, personality, orthodoxy, customs, tradition, and socialization through Physical Education.

Course Outcomes: At the end of the course, the student will be able to

CO No.	Expected outcome	Learning Domains
CO1	Understand the basic framework of the research process and approaches	R,U
CO2	Identify research problem	R,U,A
CO3	Classify and formulate different types and methods of research	R,U,A
CO4	Develop an understanding of various research designs and techniques.	A, AN
CO5	Identify correct methods for sample selection and techniques of data collection	A, An,E

***Remember (R), Understand (U), Apply (A), Analyze (An), Evaluate (E), Create (C)**

Mapping of Course Outcomes to PSOs

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	✓		✓	✓	✓	
CO2		✓	✓		✓	
CO3	✓		✓		✓	✓
CO4		✓	✓	✓	✓	
CO5	✓		✓		✓	✓

COURSE CONTENTS

Module I:

Hours of transaction: 15

- 1.1 The meaning, nature and scope of sports and importance of sports psychology, development of sports psychology, relationship of sports psychology with other sports sciences.
- 1.2 Motivation: Meaning of motives, need, drive role of motives, theory of motivation, achievement motivation and competitiveness, techniques of motivation, Importance of motivation in peak performance. Feedback, Reinforcement and Intrinsic Motivation, Principles of Reinforcement- Positive and Negative Reinforcement, Measurement of sports motivation.
- 1.3 Arousal, Anxiety, Stress, Fear, Frustration conflict - their process and effect on sport performance, Implication for practice. Arousal regulation - Self-awareness of anxiety, Anxiety reduction techniques, On-site relaxation tips, Arousal inducing techniques.
- 1.4 Exercise and psychological well-being, Exercise in the reduction of anxiety and depression, exercise and mood changes, how exercise enhances well-being, reasons to exercise, strategies and guidelines to enhance adherence to exercise.

Suggested readings specific to the module

- 1.1 Mangal S.K (2021) - *Sports Psychology – SAGE Publications PVT LTD*
- 1.2 Richard H. Cox (1990) - *Sport Psychology: Concepts and Applications – Wm. C. Brown*
- 1.3 Martin Hagger, Nikos Chatzisarantis (2005) – *The social psychology of Exercise and Sport- McGraw-Hill Education*
- 1.4 Dieter Hackfort, Charles Donald Spielberg (1989) - *Anxiety in Sports: An International Perspective – Hemisphere Publishing*

Corporation

Module II:

Hours of transaction: 15

- 2.1** Mental activity of athletes, mental activity and sports-related goals. Goal settings - Types of goals, goals setting-effectiveness, basic principles, designing a goal setting system.
- 2.2** Cognitive process in physical activities:
- Characteristics of cognitive processes in sports. Role of sensation and perception in physical activity, function of thinking and imagination and memory in physical activities
 - Meaning and Importance of attention, Dimensions of attention/concentration, choking self-talk, strategies to develop attention.
- 2.3** Self-confidence & concentration
- Definition, Benefits Optimal confidence, Influence expectation on performance, self-efficacy theory, assessing and self-confidence.
 - Concentration- Definition, Process of attentional focus, connecting concentration to optimal performance, Identifying types of attentional focus, Improving concentration, Assessing attention skill
- 2.4** Psychological skill training – Importance, PST knowledge base, PST effectiveness, three phase of PST program, implementation of PST program, PST program development. Imagery: Meaning, Types, Uses, How it works, basic of Imagery Training,

Suggested readings specific to the Module

- 2.1** Gershon Tenenbaum, Robert C. Eklund (2020) - *Handbook of Sport psychology* – Wiley
- 2.2** Thelma S. Horn (2008) - *Advances in Sport Psychology* – Human Kinetics
- 2.3** Ellis Cashmore (2008) - *Sport and Exercise Psychology: The Key Concepts* – Taylor & Francis
- 2.4** Maurizio Bertollo, Edson Filho, Peter C. Terry (2020) - *Advancements in Mental Skills Training* – Taylor & Francis

Module III:

Hours of transaction: 15

- 3.1** Understanding Personality and Emotion in Sports
- Personality: Meaning of personality, Theory of personality, Structure of personality, Personality traits of sportsmen, Relationship of personality to sports performance, Personality differences among various sports groups and Measurement of personality
 - Emotion: Meaning and types of emotions, Specific emotional processes in physical activities, Level of aspiration and emotion (success

and failure)

3.2 Psychology of Athletic Injuries and Rehabilitation: Psychology and athletic injuries, Role of psychological factors in athletic injuries, Antecedents of injuries Stress injuries relationship, Role of sports psychology in injuries rehabilitation

3.3 Motor Learning and Skill Acquisition: Motor Learning, Development of motor learning

Factors affecting motor learning, Motor skill acquisition, Transfer of training and its types with implications in sports

3.4 Psycho-regulation Techniques and Competition Preparation:

Psycho- regulative procedures in sports, Details of selected psycho-regulative procedures for activation and relaxation (Autogenic training and Ideomotoric training) and Psychological aspects of long-term and short-term preparation for competition

Suggested readings specific to the module:

3.1 Joanne Thatcher, Marc Jones, David Lavalle.(2011) - *Coping and Emotion in Sport: Second Edition – Taylor &Francis*

3.2 Ian Renshaw, Keith Davids, Geert J.P. Savelsbergh (2010) - *Motor Learning Practice: A Constraints-Led Approach – Taylor & Francis*

3.3 Adam Gledhill, Dale Forsdyke (2021) *The Psychology of Sports Injury: From Risk to Retirement – Taylor & Francis*

3.4 Monna Arvinen-Barrow and Natalie Walker (2013) - *The Psychology of Sport Injury and Rehabilitation – Routledge*

Module IV:

Hours of transaction: 15

4.1 Group Dynamics and Team Management

- Group and Team Dynamics, Group structure, Formation of a team and Effective team climate
- Leadership: Definition, Approaches to leadership,Multi-dimensional model of sports leadership, Components of effective leadership

4.2 Audience, Communication, and Injury,

- Sport Audience and Their Effect on Performance
- Communication: Understanding the communication process, Effective message sending and receiving, Recognizing breakdowns in communication. Improving communication skills, Dealing with confrontation
- Athletic Injury and Psychology,Causes of injury, Relationship between stress and injury, Psychological reactions to exercise and injury, Role of sports psychology in injury rehabilitation

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4.3 Mental Health and Well-being in Sports

4.4 Burnout and Overtraining: Definition of overtraining, staleness, and burnout Frequency and models of burnout, Factors leading to overtraining and burnout, Symptoms and measurement of burnout, Burnout in sports professionals, Treatment and prevention strategies for burnout.

Suggested readings specific to the module:

4.1 Mark R. Beauchamp (2014) - *Group Dynamics in Exercise and Sport Psychology* – Taylor & Francis

4.2 Mark AEys, Mark R. Beauchamp (2007) - *Group Dynamics in Exercise and Sport Psychology* – Taylor & Francis

4.3 Monna Arvinen-Barrow and Natalie Walker (2013) - *The Psychology of Sport Injury and Rehabilitation* – Routledge

4.4 Horn, Thelma, Smith and Alan (2018) - *Advances in Sport and Exercise Psychology, 4E* – Human Kinetics

Module 5 : Teacher Specific Module

Hours of transaction:15

- The respective teacher will prepare the module content, allowing for adaptability in designing the material according to feasibility, prior modules, and pertinent information.

Core Compulsory Reading

- Abbe Brady, Bridget Grenville-Cleave (2017) - *Positive Psychology in Sport and Physical Activity – An introduction* – Taylor & Francis
- Weinberg, Robert S, Gould Daniel (2019) - *Foundations of Sport and Exercise Psychology, 7E* – Human Kinetics
- John Perry (2023) *Sports Psychology: A Complete Introduction* – Hodder & Stoughton
- *Sport Psychology – The Basics* – David Tod

Core Suggested Readings

- Damon Burton, Thomas D. Raedeke (2008) - *Sport Psychology for Coaches* – Human Kinetics
- David Todd (2022) - *Sport Psychology – The Basics* - Routledge

TEACHING LEARNING STRATEGIES

The content of the syllabus may be taught by using lecture method, discussion method, quiz method, educational videos, charts, and assignment method depending upon the resources and facilities available at the University/Institute/ Department/Colleges.

MODE OF TRANSACTION

Lecture/Discussions/Fieldwork/Project/Work/Viva/Seminars/TermPapers/presentations

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/Self/ Learning Instructional Material etc.

ASSESSMENT RUBRICS

Evaluation Type		Marks
End Semester Evaluation		50
Continuous Evaluation		50
a)	Test Paper – 1 (Written/Oral)	10
b)	Test Paper – 2 (Written/Oral)	10
c)	Assignment Seminar Record Viva-Voce Any other relevant mode of evaluation	(Any three - each for 10 marks) 10 X 3 = 30 Marks
Total		100

Sample Questions to test Outcomes.

1. How do self-confidence impact athletic performance and what strategies can athletes employ to build and maintain high levels of self-confidence?
2. What role does imagery play in sports performance, and how can athletes utilize visualization techniques to enhance their skills and performance outcomes?
3. Explain the relationship between arousal levels and athletic performance. How can athletes manage their arousal levels to optimize performance under pressure?
4. Discuss the impact of stress and anxiety on sports performance. What coping strategies can athletes use to effectively manage stress and anxiety during competition?
5. How does the coach-athlete relationship influence athlete motivation and performance? What are some effective communication strategies coaches can use to support and motivate their athletes?

SEMESTER VI

KU6DSCPES307–MAJOR GAMES (SWIMMING)

Semester	Course Type	Course Level	Course Code	Credits	Total Hours
6	DSC	300	KU6DSCPES307	4	105

Learning Approach (Hours/ Week)			Marks Distribution			Duration of ESE (Hours)
Lecture	Practical/ Internship	Tutorial	CE	ESE	Total	
15	90	10	50	50	100	2 hrs

Lecture/Tutorials, P/I=Practical/Internship, CE =Continuous Evaluation, ESE = End Semester Evaluation

Course Description

This course is designed to learn swimming techniques, water safety skills, and stroke development. The course will include both theoretical and practical components, with an emphasis on skill acquisition and confidence-building in the water.

Course Pre- requisite: One should know the basic swimming technique

Course Outcomes: At the end of the course, the student will be able to

CO No.	Expected outcome	Learning Domains
CO1	Learn different swimming techniques	U,A
CO2	Understand the water safety skills	R,U,A
CO3	Perform different strokes in swimming	A,An,C
CO4	More confidence and comfort in the water	A, An,E

***Remember (R), Understand (U), Apply (A), Analyse (An), Evaluate (E), Create (C)**

Mapping of Course Outcomes to PSOs

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	✓		✓	✓		
CO2			✓	✓		
CO3		✓	✓	✓		
CO4		✓	✓	✓	✓	

COURSE CONTENTS

Module 1: Water Safety and Basic Skills

Hours of transaction: 20

- 1.1 Introduction to water safety rules and guidelines.
- 1.2 Getting comfortable in the water (submerging, floating, Kicking techniques, Arm movements)
- 1.3 Breath control exercises.
- 1.4 Introduction to basic swimming strokes.

Suggested Reading specific to the module

- 1.1 Mark Young (2010) - *The complete beginners guide to swimming* - Educate and Learn Publishing.
- 1.2 Mark Young (2016) *How to Float. Tips and tricks to help anyone float when learning how to swim: Educate and Learn Publishing Publisher*
- 1.3 Ernest W. Maglischo (2003) *Swimming Fastest. Human Kinetics*
- 1.4 Justin Patrick · (2018). *Just Keep Swimming. Amazon Digital Services LLC - KDP Print US.*

Module 2: Stroke Development

Hours of transaction: 40

- 2.1 Freestyle (front crawl)
- 2.2 Backstroke
- 2.3 Breaststroke
- 2.4 Butterfly

Suggested Reading specific to the module

- 2.1 Mark Young (2014). *The Swimming Strokes Book. Easy exercises for learning how to swim the four basic swimming strokes. Educate and Learn Publishing*
- 2.2 Sheila Taormina (2014). *Swim Speed Strokes for Swimmers and Triathletes. Master Freestyle, Butterfly, Breaststroke and Backstroke for Your Fastest Swimming (Swim Speed Series):Velo PressPublisher*

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2.3 Michael Brooks (2019). *Developing swimmers. Human Kinetics*

2.4 Cecil Colwin (2002) *Breakthrough Swimming. Human Kinetics*

Module 3: layout and marking of swimming pool

Hours of transaction: 20

3.1 Length, width, lane marking

3.2 Start end, turn end, depth marking

3.3 Warm-Up and cool-down areas

3.4 Backstroke flags

Suggested Reading specific to the module

3.1 John Dawes (1979). *Design and Planning of Swimming Pools.* Architectural Press publisher

3.2 John Dawes (1986). *Design & Planning of Swimming Pools:* Institute of swimming pool engineers Publisher

3.3 Philip H. Perkins (2023). *Swimming pools. Design and construction: CRC press publisher*

3.4 Mark Young (2016) *The Complete Beginners Guide To Swimming* ISBN: 9780995484207, 0995484201. E book

Module 4: Rules and officiating

Hours of transaction: 20

4.1 National and international organizations/federations of swimming

4.2 Race distance rules and Stroke rules

4.3 Equipment regulations

4.4 Disqualifications review and appeals

Suggested Reading specific to the module

4.1 Carlton R. Meyers, William H. Sanford (1963) *Swimming and Diving Officiating.* National Press Publisher:

4.2 Alan S. Goldberger, Alan S. Goldberger, J.D. (2007). *Sports Officiating. A Legal Guide*

4.3 Bompa O. Tudor and Halff G. Gregory. (2009) "Periodization Theory and Methodology of Training" Human kinetics. NY.

4.4 Mark Young (2010) - *The complete beginners guide to swimming – Educate and Learn Publishing*

Module 5 : Teacher Specific Module

Hours of transaction:05

- The respective teacher will prepare the module content, allowing for adaptability in designing the material according to feasibility, prior modules, and pertinent information.

Core Compulsory Readings

- Michael Brooks (2019). *Developing swimmers. Human Kinetics*

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- Cecil Colwin (2002) Breakthrough Swimming. Human Kinetics
- Sheila Taormina (2014). Swim Speed Strokes for Swimmers and Tri athletes. Master Freestyle, Butterfly, Breaststroke and Backstroke for Your Fastest Swimming (Swim Speed Series): Velo Press Publisher
- Ernest W. Maglischo (2003) Swimming Fastest. Human Kinetics
- Justin Patrick · (2018). Just Keep Swimming. Amazon Digital Services LLC
- KDP Print US
- John Dawes (1986). Design & Planning of Swimming Pools: Institute of swimming pool engineers Publisher
- Philip H. Perkins (2023). Swimming pools. Design and construction: CRC press publisher

Core Suggested Readings

- Ernest W. Maglischo (2003) Swimming Fastest. Human Kinetics
- Mark Young (2010) - The complete beginners guide to swimming – Educate and Learn Publishing
- Bompa O. Tudor and Halff G. Gregory. (2009) "Periodization Theory and Methodology of Training" Human kinetics. NY.
- Mark Young (2016) The Complete Beginners Guide To Swimming ISBN: 9780995484207, 0995484201. E book
- Justin Patrick · (2018). Just Keep Swimming. Amazon Digital Services LLC
- KDP Print US.
- Mark Young (2014). How to Swim Butterfly. A Step-By-Step Guide for Beginners Learning Butterfly Technique. Educate and Learn Publishing.
- Mark Young (2016) How to Float. Tips and tricks to help anyone float when learning how to swim: Educate and Learn Publishing Publisher
- Mark Young (2010) - The complete beginners guide to swimming – Educate and Learn Publishing

TEACHING LEARNING STRATEGIES

The content will be taught by using demonstration, explanation, presentation methods, videos, learning by doing, Whole part whole method Drills.

MODE OF TRANSACTION

Practice of Techniques/ learning by doing/ Individual Practice etc.

ASSESSMENT RUBRICS

Evaluation Type		Marks
End Semester Evaluation		25
a)	Skill proficiency	15
b)	Record file	5
c)	Viva	5
Continuous Evaluation		25
a)	Skill proficiency	15
b)	Record file/Field Visit/Project Report	5
c)	Viva	5
Total		50

Sample Questions to test Outcomes.

1. Discuss the importance of water safety skills for swimmers of all ages.
2. Describe the different swimming strokes commonly used in competitive swimming
3. What are the potential health benefits and risks associated with swimming in chlorinated pools?
4. Describe the importance of proper warm-up and cool-down routines in swimming training

Employability for the Course / Programme

- Swimming instructor
- Freelance Swim coaches
- Aquatic Facility Manager
- Lifeguards
- Recreation Directors
- Swim Program Coordinators
- Swim Team Administrators

SEMESTER VI**KU6DSEPES304: INJURY PREVENTION AND REHABILITATION**

Semester	Course Type	Course Level	Course Code	Credits	Total Hours
6	DSE	300	KU6DSEPES304	4	75

Learning Approach (Hours/ Week)			Marks Distribution			Duration of ESE (Hours)
Lecture	Practical/ Internship	Tutorial	CE	ESE	Total	
45	30	75	50	50	100	2 hrs

Lecture/Tutorials, P/I=Practical/Internship, CE =Continuous Evaluation, ESE = End Semester Evaluation

Course Description

This course will enable students to get an overview of injury rehabilitation, identify the classification of injuries, its causes and treatment modalities. It will apart from understanding strategies and considerations for injury prevention and rehabilitation, will equip the students to apply rehabilitation techniques and functional training putting the athlete back to play.

Course Outcomes: At the end of the course, the student will be able to

CO No.	Expected outcome	Learning Domains
CO1	Develop an overview of injury rehabilitation and its principles. Identify the role of athletes, coaches and medical professionals in the process.	R,U
CO2	Identify the classification of injuries, its causes and treatment modalities	R,U,A
CO3	Understand the strategies and considerations for injury prevention	R,U,A
CO4	Understand, learn, and apply rehabilitation techniques and functional training protocol	U,A, An,E

***Remember (R), Understand (U), Apply (A), Analyse (An), Evaluate (E), Create (C)**

Mapping of Course Outcomes to PSOs

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	✓	✓	✓			
CO2	✓		✓			
CO3		✓	✓			
CO4		✓	✓	✓	✓	✓

Module 1 - Introduction to injury prevention and rehabilitation

Hours of transaction: 15

- 1.1 Overview of Injury rehabilitation in athletes
- 1.2 Importance of Injury prevention and rehabilitation in sports
- 1.3 Principles of injury prevention and rehabilitation
- 1.4 Role of athletes, coaches and medical professionals in injury prevention and rehabilitation

Suggested readings specific to the module

- 1.1 Carlson and Pietrzyk (2018): *Introduction to Sports Medicine*
- 1.2 Shamus and Shamus (2017) *Sports Injury Prevention & Rehabilitation.*
- 1.3 Bennet (2015): *Injury Prevention and Rehabilitation in Sport.*
- 1.4 Puddu, Giombini and Selvanetti (2013): *Rehabilitation of Sports Injuries: Current Concepts*

Module 2 - Common Sports Injuries

Hours of transaction: 15

- 2.1 Identification and classification of common sports injuries
- 2.2 Causes and risk factors associated with sports injuries
- 2.3 Introduction to treatment modalities for different types of injuries

Suggested readings specific to the module

- 2.1 Piedade, Neyret and Espreguira-Mendes (2021): *Specific Sports-Related Injuries*
- 2.2 Pattenden (2019): *BMA Guide to Sports Injuries: The Essential Step-by-Step guide to prevention, diagnosis, and treatment.*
- 2.3 Karantanas (2011): *Sports Injuries in Children and Adolescents*
- 2.4 Griffith (2004): *The Complete Guide to Sports Injuries.*

Module 3 - Injury Prevention Strategies

Hours of transaction: 15

- 3.1 Pre-season preparation and conditioning programs
- 3.2 Warm-up and cool-down protocols
- 3.3 Proper technique and form to minimize injury risk
- 3.4 Equipment selection and fitting for injury prevention

Suggested readings specific to the module

- 3.1 Mohan and Tiwari (2003): *Injury prevention and control*
- 3.2 Doll, Haas, and Bonzo (2007): *Handbook of Injury and Violence Prevention*
- 3.3 Spicer, Rivara, Ford and Graham (2014): *Sports-Related Concussions in Youth*
- 3.4 Maffulli, and Caine (2014): *Epidemiology of Pediatric Sports Injuries: Team Sports – Volume 2*

Module 4 - Rehabilitation techniques

Hours of transaction: 15

- 4.1 Goals of rehabilitation and its stages
- 4.2 Rehabilitation exercises and techniques for specific injuries.
- 4.3 Modalities used in rehabilitation.
- 4.4 Functional training and return to play.

Suggested readings specific to the module

- 4.1 Verde (2021): *Rehabilitation Methodology and Strategies- A Study Guide for Physiotherapists*
- 4.2 Sine (2000): *Basic Rehabilitation Techniques: A Self-instructional guide*
- 4.3 Prentice (2010): *Rehabilitation Techniques for Sports Medicine*
- 4.4 Prentice (2011): *Therapeutic Modalities in Rehabilitation*

Module 5: Teacher Specific Module

Hours of transaction: 15

- Practical demonstration of injury prevention techniques
- Training in first aid, CPR, and sports injury management
- Any other practicum related content will be evaluated

Core compulsory readings.

- Bellwe, Michlovitz and Nolan (2016): *Miclovitz's Modalities for Therapeutic intervention.*
- Craig, Saliba, Ethan, Saliba and Susan (2015): *Therapeutic Modalities for Musculoskeletal Injuries*
- Knight, Knight and Draper (2012): *Therapeutic Modalities: The Art and Science*
- Prentice (2017): *Therapeutic Modalities in Rehabilitation*
- Pfeiffer (2008): *Sports First Aid and Injury Prevention.*
- Mohan and Tiwari (2003); *Injury Prevention and Control*
- Doral, Tandogan, and Mann (2011): *Sports Injuries: Prevention,*

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Diagnosis, Treatment and Rehabilitation.

Core suggested readings

- *Bonnie, Fulco, and Liverman (1999): Reducing the Burden of Injury: Advancing Prevention and Treatment*
- *Gallucci (2014): Soccer Injury Prevention and Treatment: A Guide to Optimal Performance for Players, Parents, and Coaches.*
- *Joyce, and Lewindon (2015): Sports Injury Prevention and Rehabilitation: Integrating Medicine and Science for Performance Solutions*
- *Kanosue, Ogawa, Fukano (2015): Sports Injuries and Prevention.*
- *Lindblom (2019): Injury Prevention in Youth Football Players: Training effects and Program Implementation.*

TEACHING LEARNING STRATEGIES

The content of the syllabus may be taught by using lecture method, discussion method, quiz method, educational videos, charts, and assignment method depending upon the resources and facilities available at the University/Institute/ Department/Colleges.

MODE OF TRANSACTION

Lecture/Discussions/Fieldwork/Project/Work/Viva/Seminars/TermPapers/Pr esentations/Self/ Learning Instructional Material etc.

ASSESSMENT RUBRICS

Evaluation Type		Marks
End Semester Evaluation		50
Continuous Evaluation		50
a)	Test Paper – 1 (Written/Oral)	10
b)	Test Paper – 2 (Written/Oral)	10
c)	Assignment Seminar Record Viva-Voce Any other relevant mode of evaluation	(Any three - each for 10 marks) 10 X 3 = 30 Marks
Total		100

Sample questions to test Outcomes.

- What are the three most common types of injuries
- Describe the signs and symptoms of a sprained ankle
- What are the immediate steps one should be taken if a student sustains injury during class?

SEMESTER VI**KU6DSEPES305: SPORTS ENTREPRENEURSHIP**

Semester	Course Type	Course Level	Course Code	Credits	Total Hours
6	DSE	300	KU6DSEPES305	4	60

Learning Approach (Hours/ Week)			Marks Distribution			Duration of ESE (Hours)
Lecture	Practical/ Internship	Tutorial	CE	ESE	Total	
60	-	60	50	50	100	2 hrs

Lecture/Tutorials, P/I=Practical/Internship, CE =Continuous Evaluation, ESE = End Semester Evaluation

Course Description

This course will help the students to understand the trends and possibilities of entrepreneurship in the sporting industry, acquiring knowledge and enabling them to develop qualities and competencies to emerge as entrepreneurs in the industry.

Course Outcomes: At the end of the course, the student will be able to

CO No.	Expected outcome	Learning Domains
CO1	Understand entrepreneurship with the sports industry	R,U
CO2	Acquire knowledge enabling them to set up their enterprises, catering to various demands of the sports industry	R,U,A
CO3	Understand HRM and leadership as applicable to the Sports Industry.	R,U,A
CO4	Acquaint to the sports industry in India and the future possibilities	A, An,E

***Remember (R), Understand (U), Apply (A), Analyse (An), Evaluate (E), Create (C)**

Mapping of Course Outcomes to PSOs

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	✓	✓	✓			
CO2			✓			
CO3	✓		✓	✓		✓
CO4	✓	✓	✓		✓	✓

COURSE CONTENTS

Module 1: Introduction to Sports Entrepreneurship

Hours of transaction: 10

- 1.1 Meaning and Definition of Entrepreneurship
- 1.2 Concept and Characteristics Entrepreneurship.
- 1.3 Need for and Importance of entrepreneurship in sports.
- 1.4 Institution for entrepreneurship development and the future of entrepreneurship.

Suggested readings specific to the module.

- 1.1 Donald F. Kuratko (2009) – *Introduction to Entrepreneurship – South-Western*
- 1.2 Sangram Keshari Mohanty (2005). – *Fundamentals of Entrepreneurship – PHI Learning*
- 1.3 S. Anil Kumar (2008) – *Entrepreneurship Development – New Age International*
- 1.4 S. Anil Kumar (2008). *Entrepreneurship Development. New Age International Publisher*

Module 2: HRM and Leadership as Applicable to Sports

Hours of transaction: 15

- 2.1 Meaning, nature and scope of HRM
- 2.2 Personnel Management versus HRM
- 2.3 Functions of HRM; Organization of HRM, Qualities and Qualification of HRM managers
- 2.4 Concepts of HRM as applicable to Sports.

Suggested readings specific to the module.

- 2.1 Peter Thiel, *Zero to One: Notes on Start Ups, or How to Build the Future*, 0804139296 (ISBN13: 9780804139298)
- 2.2 Roger Cowdrey, *Creating an Entrepreneurial Mindset-Failure IS an Option*

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2.3 Anthony Ekanem (2016) – *Identifying business opportunities*

2.4 Bensley, R. J. and Fisher, J. B (2009). *Community Health Education Methods.*

Massachusetts: Jones and Bartlett Publishers

Module 3: Business ideas and Govt and private entrepreneurship

Hours of transaction: 15

3.1 Business Ideas, methods of generating and business opportunities.

3.2 Meaning, and significance of business plan.

3.3 Government and Private Organizations Supporting Entrepreneurship in India

3.4 Generating/arranging funds for the business.

Suggested readings specific to the module.

3.1 Anthony Ekanem (2016) – *Identifying business opportunities.*

3.2 Divyam Agarwal et.al (2021) – *10 Steps to start your business – PARK*

3.3 Simon, Mosey, Richard Shipway, Chris Symons –
Entrepreneurship and innovations in sports and Leisure –
Taylor & Francis

3.4 Roger Cowdrey, *Creating an Entrepreneurial Mindset-Failure IS an Option*

Module 4: Sports industries in India

Hours of transaction: 15

4.1 Growth of the sports industry in India and Sports infrastructure

4.2 Employment generation in sports

4.3 Emergence of New Sporting Leagues

4.4 Entrepreneurship in Sports software / fitness/ Nutrition.

Suggested readings specific to the module.

4.1 Vanessa Ratten (2018) – *Sport entrepreneurship. – Springer International Publishing*

4.2 Simon, Mosey, Richard Shipway, Chris Symons –
Entrepreneurship and innovations in sports and Leisure –
Taylor & Francis

4.3 Bruce R. Barringer (2015) – *Entrepreneurship: Successfully Launching New Ventures- Person*

4.4 S. Anil Kumar (2008). *Entrepreneurship Development. New Age International Publisher*

Module 5: Teacher Specific Module

Hours of transaction: 05

- Organizing sports events, Sports-related services
- Discussion with sports industry leaders
- Any other practicum related content will be evaluated

Core Compulsory readings

- *Peter Thiel, Zero to One: Notes on Start Ups, or How to Build the*

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Future, 0804139296 (ISBN13: 9780804139298)

- *Roger Cowdrey, Creating an Entrepreneurial Mindset-Failure IS an Option*
- *Anthony Ekanem (2016) – Identifying business opportunities*
- *Bensley, R. J. and Fisher, J. B (2009). Community Health Education Methods. Massachusetts: Jones and Bartlett Publishers.*

Core suggested readings

- *Peter Thiel, Zero to One: Notes on Startups, or How to Build the Future, 0804139296 (ISBN13: 9780804139298)*
- *Guy Kawasaki (2004), The Art of the Start: The Time-Tested, Battle-Hardened Guide for Anyone Starting Anything, 1591840562 (ISBN13: 9781591840565)*
- *Simon, Mosey, Richard Shipway, Chris Symons – Entrepreneurship and innovations in sports and Leisure – Taylor & Francis*

TEACHING LEARNING STRATEGIES

- The class will be taught by using lectures and demonstration, seminars, classroom discussion, videos, charts and presentation methods.

MODE OF TRANSACTION

- Lecture//Laboratory Work/ Field Work/ Outreach Activities/ Project Work/ Vocational Training/Viva/ Seminars/ Term Papers/Assignments/ Presentations/ Self-Study etc

ASSESSMENT RUBRICS

Evaluation Type		Marks
End Semester Evaluation		50
Continuous Evaluation		50
a)	Test Paper – 1 (Written/Oral)	10
b)	Test Paper – 2 (Written/Oral)	10
c)	Assignment Seminar Record Viva-Voce Any other relevant mode of evaluation	(Any three - each for 10 marks) 10 X 3 = 30 Marks
Total		100

Sample Questions to test Outcomes.

- Define entrepreneurship and explain its relevance to the sports industry.
- What are the key characteristics of successful sports entrepreneurs?

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- Discuss the challenges and potential barriers to entry faced by entrepreneurs in the sports industry.
- Develop an action plan for pursuing opportunities and overcoming challenges in sports entrepreneurship.

SEMESTER VI

KU6DSEPES306: SPORTS JOURNALISM

Semester	Course Type	Course Level	Course Code	Credits	Total Hours
6	DSE	300	KU6DSEPES306	4	60

Learning Approach (Hours/ Week)			Marks Distribution			Duration of ESE (Hours)
Lecture	Practical/ Internship	Tutorial	CE	ESE	Total	
60	-	60	50	50	100	2 hrs

Lecture/Tutorials, P/I=Practical/Internship, CE =Continuous Evaluation, ESE = End Semester Evaluation

Course Description

This course will help the students to understand the basics of journalism and mass communication. The students will also gain knowledge on how to report on events, programs and news.

Course Outcomes: At the end of the course, the student will be able to

CO No.	Expected outcome	Learning Domains
CO1	Understand basic concepts of journalism	R,U
CO2	Understand the basics of mass communication.	R,U,A
CO3	Get oriented to mass media and media technology	R,U,A,E
CO4	Learn fundamentals of news writing and news reporting	A, An, C

***Remember (R), Understand (U), Apply (A), Analyse (An), Evaluate (E), Create (C)**

Mapping of Course Outcomes to PSOs

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	✓		✓			
CO2	✓	✓	✓			
CO3			✓	✓	✓	
CO4		✓	✓	✓	✓	✓

COURSE CONTENTS

Module 1: Introduction

Hours of transaction:10

- 1.1. Meaning and Definition of Journalism
- 1.2. Ethics and Canon of Journalism
- 1.3. Mode of Journalism - Print electronic and informal media
- 1.4. National and International Sports News Agencies.

Suggested readings specific to the module.

- 1.1 Ahiya B.N. Chobra S.S.A. (1990) *Concise Course in Reporting*. New Delhi: Surjeet Publication
- 1.2 Ahiya B.N. (1988) *Theory and Practice of Journalism: Set to Indian context Ed3*. Delhi: Surjeet Publications.
- 1.3 Varma A.K. (1993) *Journalism in India from Earliest Times to the Present Period*. Sterling publication Pvt. Ltd.
- 1.4 Phil Andrews (2013). *Sports Journalism: A Practical Introduction*. SAGE Publications

Module 2: Communication

Hours of transaction:15

- 2.1 Communication.
- 2.2 Model of Communication.
- 2.3 Types of Communication and Features of Communication
- 2.4 Editing and Publishing.

Suggested readings specific to the module.

- 2.1 Bhatt S.C. (1993) *Broadcast Journalism Basic Principles*. New Delhi. Haranand Publication
- 2.2 Billings, A., Butterworth, M., & Turman, P. (2014) *Communication and sport*. ISBN-13: 978-1452279138 ISBN-10: 1452279136
- 2.3 Billings, A., Butterworth, M., & Turman, P. (2012). *Communication and sport*. Thousand Oaks,

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2.4 Dr. Arvind Malik (2021). *Sports Journalism and Mass Media*. Friends Publications (India)

Module 3: Mass Media

Hours of transaction: 15

3.1 Mass media

3.2 Types of mass media, Traditional media, Folk media, Print media, electronic media, Broadcasting media, New media, Social media

3.3 Growth and evolution of mass media

3.4 Evolution of media technology

Suggested readings specific to the module.

3.1 Ahiya B.N. Chobra S.S.A. (1990) *Concise Course in Reporting*. New Delhi: Surjeet Publication

3.2 *International Encyclopedia of Communication* :Oxford.

3.3 Bhatt S.C. (1993) *Broadcast Journalism Basic Principles*. New Delhi. Haranand Publication

3.4 Deshpande, S. H. (2014) - *Physical Education in Ancient India*. Amravati: Degree College of Physical education.

Module 4: New reporting and news Writing

Hours of transaction: 15

4.1 Basics of news: what makes news?; News style: uses of simple language, impersonal, formal; Organizing the material; How to use quotes effectively.

4.2 Structure of news: Inverted Pyramid; Leads- 5Ws and 1H;

4.3 Beat reporting: skills, sources, idea, story and examining major stories in Crime, Politics, Law, Industry, Labour, Education and Health

4.4 Sources of news: press handouts, press conference, news agency, govt. and corporate documents, and individuals

Suggested readings specific to the module

4.1 Mencher, Melvin (2010), *News reporting and Writing*; 12th edition; Columbia

4.2 Shrivastava, K.M. (1987); *News Reporting and Editing*; Sterling Publication

4.3 Harris and Spark (2011), *Practical Newspaper Reporting*, 4th edition, Focal Press

4.4 Dr. Arvind Malik (2021). *Sports Journalism and Mass Media*. Friends Publications (India)

Module 5: Teacher Specific Module

Hours of transaction: 05

- The respective teacher will prepare the module content, allowing for adaptability in designing the material according to feasibility, prior modules, and pertinent information.

Core Compulsory readings

- Ahiya B.N. Chobra S.S.A. (1990) *Concise Course in Reporting*. New Delhi: Surjeet Publication.

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- Ahiya B.N. (1988) *Theory and Practice of Journalism: Set to Indian context Ed3. Delhi: Surjeet Publications.*
- Bhatt S.C. (1993) *Broadcast Journalism Basic Principles. New Delhi. Haranand Publication.*
- Billings, A., Butterworth, M., & Turman, P. (2014) *Communication and sport. ISBN-13: 978-1452279138ISBN-10: 1452279136.*
- Billings, A., Butterworth, M., & Turman, P. (2012). *Communication and sport. Thousand Oaks.*
- Deshpande, S. H. (2014) - *Physical Education in Ancient India. Amravati: Degree college of Physical education.*

Core suggested readings

- Dhananjay Joshi (2010) *Value Education in Global Perspective. New Delhi: Lotus Press.*
- Sandvoss, C., Real, M., & Bernstein, A. (2012). *Bodies of discourse. New York, NY: PeterLang.ISBN-13: 978-1433111730ISBN-10: 143311173X.*
- Shiv Khera (2002), *You Can Win, New Delhi: Macmillan India Limited.*
- Venkataiah. N (2009) *Value Education,- New Delhi: APH Publishing Corporation. 43.*

TEACHING LEARNING STRATEGIES

- The class will be taught by using lectures and demonstration, seminars, classroom discussion, videos, charts and presentations method.

MODE OF TRANSACTION

- Lecture//Laboratory Work/ Field Work/ Outreach Activities/ Project Work/ Vocational Training/Viva/ Seminars/ Term Papers/Assignments/ Presentations/ Self-Study etc

ASSESSMENT RUBRICS

Evaluation Type		Marks
End Semester Evaluation		50
Continuous Evaluation		50
a)	Test Paper – 1 (Written/Oral)	10
b)	Test Paper – 2 (Written/Oral)	10
c)	Assignment Seminar Record Viva-Voce Any other relevant mode of evaluation	(Any three - each for 10 marks) 10 X 3 = 30 Marks
Total		100

Sample Questions to test Outcomes.

- What is the role of sports journalism in the media landscape?
- Describe the process of conducting an effective interview with a sports personality
- How has digital media impacted sports journalism?
- Discuss the advantages and challenges of using social media for sports reporting

Employability for the Course / Programme

Sports journalism can provide students with the knowledge, skills, and practical experience needed to pursue rewarding career opportunities in the sports media industry and related fields. With the right blend of academic training, practical skills development, and industry connections, graduates can enhance their employability and embark on successful careers as sports journalists and media professionals.

SEMESTER VI**KU6DSEPES307: SPORTS LAW**

Semester	Course Type	Course Level	Course Code	Credits	Total Hours
6	DSE	300	KU6DSEPES307	4	60

Learning Approach (Hours/ Week)			Marks Distribution			Duration of ESE (Hours)
Lecture	Practical/ Internship	Tutorial	CE	ESE	Total	
60	-	60	50	50	100	2 hrs

Lecture/Tutorials, P/I=Practical/Internship, CE =Continuous Evaluation, ESE = End Semester Evaluation

Course Description

This course provides an overview of the legal principles and issues surrounding sports, including contract and sports law in India, doping in sports law and discrimination in sports. Students will analyze case law, statutes, and regulations to understand how legal concepts apply to the sports industry.

Course Outcomes: At the end of the course, the student will be able to

CO No.	Expected outcome	Learning Domains
CO1	Understand the legal framework and should be aware of emerging legal issues and trends in sports law	R,U
CO2	Students should be able to apply legal concepts such as contract law	U, A
CO3	Students should understand the importance of regulatory compliance in sports, including compliance with doping regulations, player contracts, league rules, and governance structures.	R,U
CO4	Students should be able to identify and assess legal risks in sports	A, U,E

***Remember (R), Understand (U), Apply (A), Analyse (An), Evaluate (E), Create (C)**

Mapping of Course Outcomes to PSOs						
	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	✓	✓	✓			✓
CO2	✓	✓	✓			✓
CO3	✓	✓	✓	✓		✓
CO4	✓	✓	✓	✓	✓	✓

COURSE CONTENTS

Module 1: Introduction to the Sports Law

Hours of transaction: 10

- 1.1 What is sports law
- 1.2 Authorities for Sports in India
- 1.3 Media Rights and the Exclusivity of Sports Broadcasts
- 1.4 Legal rights and duties of a sports person

Suggested readings specific to the module.

- 1.1 Mohammad Naseem, Saman Naseem (2022). *Sports Law in India*
- 1.2 Robert C.R. Siekmann, Janwillem Soek (2012). *Lex Sportiva: What is Sports Law?*
- 1.3 LawJack Anderson (2013). *Leading Cases in Sports*
- 1.4 Simon Gardiner, Roger Welch, Simon Boyes (2012). *Sports Law*

Module 2: Contract and Sports Law in India

Hours of transaction: 15

- 2.1 Endorsement contracts under sports laws/ for sportspersons
- 2.2 Sportsmen appearance contract and Standards sports player contract
- 2.3 Various contracts between sports persons with other parties
- 2.4 Sports contract: intricacies and challenges

Suggested readings specific to the module.

- 2.1 LawJames A. R. Nafziger, Stephen F. Ross (2011). *Handbook on International Sports*
- 2.2 LawStephen F. Ross (2021). *Advanced Introduction to Global Sports*
- 2.3 S. Blackshaw (2017). *International Sports Law: An Introductory Guide Line*
- 2.4 Linda Sharp, Anita Moorman, Cathryn Claussen (2014). *Sport Law: A Managerial Approach*

Module 3: Doping in Sports Law

Hours of transaction: 15

- 3.1 Laws and regulations governing anti-doping
- 3.2 Laws and regulations governing match-fixing
- 3.3 Business and trade in sports and Sports regulation and governance in India

3.4 Issues in the field of sports law

Suggested readings specific to the module.

3.1 Andrew T Pittman, John O. Spengler, Sarah J. Young (2016). *Case Studies in Sport Law*

3.2 Margaritis, Konstantinos (2018). *Law, Ethics, and Integrity in the Sports Industry*

3.3 Lovely Dasgupta, Shameek Sen (2018). *Sports Law in India: Policy, Regulation and Commercialization*

3.4 Adam Lewis, Jonathan Taylor (2014). *Sport: Law and Practice*

Module 4: Discrimination in sports

Hours of transaction: 15

4.1 Discrimination in sports

4.2 Principles of law that underpin judicial oversight of sports

4.3 Sponsorship rights, broadcast rights and special protection of Olympic properties

4.4 Role of arbitration in sports

Suggested readings specific to the module.

4.1 Danie Kilvington John Price (2017). *Sport and Discrimination*

4.2 Miller, Kristi Schoepfer (2017). *Legal Aspects of Sports*

4.3 John Otto Spengler, Paul Anderson, Daniel P. Connaughton (2009). *Introduction to Sport Law*

4.4 Johan Lindholm (2019). *The Court of Arbitration for Sport and Its Jurisprudence.*

Module 5: Teacher Specific Module

Hours of transaction: 05

- Group discussion on the real-life examples and current events
- Encouraging critical thinking and debate among students
- Collection of Legal databases for researching sports law cases

Core Compulsory Readings

- Sports law in India – policy, regulation and commercialization , Edited by Lovely das gupta , shameeksen
- Sports Law by Patrick k Thornton, Johns and Barter Publisher
- Yearbook of International Sports Arbitration 2016 Antoine Duval Antonio Rigozzi(2018)
- Rules of the Game: Sports Law Michael E. Jones (2016)

Core Suggested Readings

- <https://ssrana.in/corporate-laws/gaming-and-sports-laws-india/sports-law-faq/>
- <https://scholarship.law.marquette.edu/cgi/viewcontent.cgi?article=1517&context=sportsl>

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TEACHING LEARNING STRATEGIES

- The class will be taught by using lectures and demonstration, seminars, classroom discussion, videos, charts and presentations method.

MODE OF TRANSACTION

- Lecture/Laboratory Work/ Field Work/ Outreach Activities/ Project Work/ Vocational Training/Viva/ Seminars/ Term Papers/Assignments/ Presentations/ Self-Study etc.,

ASSESSMENT RUBRICS

Evaluation Type		Marks
End Semester Evaluation		50
Continuous Evaluation		50
a)	Test Paper – 1 (Written/Oral)	10
b)	Test Paper – 2 (Written/Oral)	10
c)	Assignment Seminar Record Viva-Voce Any other relevant mode of evaluation	(Any three - each for 10 marks) 10 X 3 = 30 Marks
Total		100

Sample Questions to test Outcomes.

- Explain the key elements of a valid contract in sports
- Describe a situation where a sports organization could be held liable for negligence
- Outline a framework for ethical decision-making in sports law

SEMESTER VI

KU6DSEPES308: GERIATRIC HEALTH AND FITNESS

Semester	Course Type	Course Level	Course Code	Credits	Total Hours
6	DSE	300	KU6DSEPES308	4	120

Learning Approach (Hours/ Week)			Marks Distribution			Duration of ESE (Hours)
Lecture	Practical/ Internship	Tutorial	CE	ESE	Total	
60	-	60	50	50	100	2 hrs

L/T=Lecture/Tutorials, P=Practical, CE =Continuous Evaluation, ESE = End Semester Evaluation.

Course Description

Geriatric Health and Fitness, a course at the higher level (300 level) _explores the unique health and fitness needs of older adults. This course is designed to provide students with a comprehensive understanding of the physiological changes associated with aging, as well as evidence-based strategies for promoting health, well-being, and physical function in older populations. The course is divided into four modules, each focusing on different aspects of geriatric health and fitness, including exercise programming, nutrition, chronic disease management, and psychological well-being.

COURSE OUTCOME

After the completion of the course, the student will be able to:

CO No.	Expected outcome	Learning Domains
CO1	Understand geriatric health and fitness considering physiological changes associated with aging. Principles of exercise programming for older populations especially with reference to strength, flexibility and functional training.	R,U
CO2	Be aware of nutritional needs of older adults - common nutritional deficiencies, dietary guidelines and recommendations with regard to meal planning and hydration strategies.	R,U,A

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CO3	Understand common chronic conditions in Aging – risk factors and lifestyle interventions for chronic disease prevention. Exercise considerations and precautions for older adults with chronic diseases.	R,U,A
CO4	Understand common mental health issues of aged people and provide social support and develop strategies for promoting mental health and resilience. of social connections and relationships for older adults	A, An

***Remember (R), Understand (U), Apply (A), Analyse (An), Evaluate (E), Create (C)**

Mapping of Course Outcomes to PSOs

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7
CO1	✓	✓	✓	✓		✓	
CO2		✓	✓	✓	✓	✓	✓
CO3		✓	✓		✓	✓	
CO4		✓	✓		✓	✓	✓

COURSE CONTENTS

Module I: Physiology of Aging and Exercise Prescription

- 1.1 Introduction to Geriatric Health and Fitness
- 1.2 Demographic trends and the aging population - Physiological changes associated with aging. Benefits of physical activity and exercise for older adults
- 1.3 Exercise Prescription for Older Adults. Principles of exercise programming for older populations. Assessment of functional fitness and mobility. Safety considerations and modifications for exercise in older adults
- 1.4 Strength, Flexibility and Resistance Training for Adults - Strength and resistance training for older adults – Benefits - exercise techniques and progressions. Flexibility and balance training and functional training activities to improve activities for daily living.

Suggested readings specific to the module

- 1.1 Nelson, M. E., Rejeski, W. J., & Blair, S. N. (2007). Physical activity and public health in older adults: Recommendation from the American College of Sports

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Medicine and the American Heart Association. *Medicine & Science in Sports & Exercise*, 39(8), 1435-1445.

- 1.2 Fiatarone Singh, M. A. (2002). *Exercise, nutrition, and the older woman: Wellness for women over fifty*. CRC Press.

Module II: Nutrition and Hydration in Aeging

- 2.1 Nutritional Needs of Older Adults - Changes in metabolism and nutrient requirements with aging. Common nutritional deficiencies in older populations. Dietary guidelines and recommendations for older adults
- 2.2 Meal Planning and Dietary Strategies. Principles of healthy eating for older adults. Strategies for promoting adequate nutrition and hydration.
- 2.3 Hydration and Fluid Balance. - Importance of hydration for older adults. Signs and symptoms of dehydration in aging populations. Strategies for promoting adequate fluid intake.
- 2.4 Nutritional Interventions for Chronic Diseases. Role of nutrition in the management of chronic diseases common in older adults. Dietary approaches for managing hypertension, diabetes, osteoporosis, and other conditions.

Suggested readings specific to the Module

- 2.1 Morley, J. E., Silver, A. J., & Nuttall, F. (2002). Anorexia of aging: Physiologic and pathologic. *The American Journal of Clinical Nutrition*, 76(2), 583- 589.
- 2.2 Chernoff, R. (2013). Nutrition and health promotion in older adults. *The Journal of Gerontology*, 58(10), M807-M812.

Module III: Module 3: Chronic Disease Management in Geriatric Populations

- 3.1** Common Chronic Conditions in Aging.
- 3.2** Prevalence and impact of chronic diseases in older adults.
- 3.3** Risk factors and lifestyle interventions for chronic disease prevention.
- 3.4** Exercise and Chronic Disease Management. Exercise considerations and precautions for older adults with chronic diseases.

Suggested readings specific to the module:

- 3.1** Rollnick, S., Mason, P., & Butler, C. (1999). *Health behavior change: A guide for practitioners*. Churchill Livingstone.
- 3.2** Hanlon, J. T., Schmader, K. E., & Ruby, C. M. (2002). Suboptimal prescribing in older inpatients and outpatients. *Journal of the American Geriatrics Society*, 50(4), 690-696.

Module IV: Psychological Wellbeing and Social Support

- 4.1** Psychological Challenges in Aging. Common mental health issues in older adults, such as depression and anxiety. Impact of cognitive decline and dementia on psychological well-being
- 4.2** Strategies for promoting mental health and resilience. Social Support and Aging
- 4.3** Loneliness and isolation as risk factors for poor health outcomes. Importance of social connections and relationships for older adults
- 4.4** Community resources and interventions to enhance social support.

Suggested readings specific to the module:

- 4.1 Knight, T., & Ricciardelli, L. A. (2003). Successful aging: Perceptions of adults aged between 70 and 101 years. *International Journal of Aging & Human Development*, 56(3), 223-245.
- 2. Gitlin, L. N., & Hodgson, N. (2015). Better living with dementia: Implications for individuals, families, communities, and societies. Elsevier.

Core Compulsory Reading

- Rollnick, S., Mason, P., & Butler, C. (1999). Health behavior change: A guide for practitioners. Churchill Livingstone
- Morley, J. E., Silver, A. J., & Nuttall, F. (2002). Anorexia of aging: Physiologic and pathologic. *The American Journal of Clinical Nutrition*, 76(2), 583-589.
- Nelson, M. E., Rejeski, W. J., & Blair, S. N. (2007). Physical activity and public health in older adults: Recommendation from the American College of Sports Medicine and the American Heart Association. *Medicine & Science in Sports & Exercise*, 39(8), 1435-1445.

Core Suggested Readings

- Haff, G., & Triplett, N. *Essentials of strength training and conditioning*. Champaign, IL: Human Kinetics.
- Singh Hardayal (1991). *Science of Sport Training*. D.V.S Pub. Delhi.
- Zatsiorsky, V., & Kraemer, W. (2006). *Science and practice of strength training*. Champaign, IL: Human Kinetics.
- Garg, K., Mittal, P. S., & Chandrupatla, M. (2016). *Human Anatomy (7th Edn)*. New Delhi: CBS Publishers.
- Waugh, A., & Grant, A. (2014). *Anatomy and physiology in health and illness (12th Edn)*. China: Churchill Livingstone Elsevier.
- Wingerd, B. (2014). *The human body: Concepts of anatomy and physiology (3rd Edn)*. Baltimore: Wolters Kluwer.

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TEACHING LEARNING STRATEGIES

The content of the syllabus may be taught by using lecture method, discussion method, quiz method, educational videos, charts, and assignment method depending upon the resources and facilities available at the University/Institute/ Department/Colleges.

MODE OF TRANSACTION

Lecture/Discussions/Fieldwork/Project/Work/Viva/Seminars/TermPapers/Presentations/Self/ Learning Instructional Material etc.

ASSESSMENT RUBRICS

Evaluation Type		Marks
End Semester Evaluation		50
Continuous Evaluation		50
a)	Test Paper – 1 (Written/Oral)	10
b)	Test Paper – 2 (Written/Oral)	10
c)	Assignment Seminar Record Viva-Voce Any other relevant mode of evaluation	(Any three - each for 10 marks) 10 X 3 = 30 Marks
Total		100

SEMESTER VI

KU6INTPES301: INTERNSHIP/ FIELD VISIT/ VOCATIONAL TRAINING

Semester	Course Type	Course Level	Course Code	Credits	Total Hours
6	Internship/Field Visit	200	KU6INTPES301	4	120

Learning Approach (Hours/ Week)			Marks Distribution			Duration of ESE (Hours)
Lecture	Practical/ Internship	Tutorial	CE	ESE	Total	
	120		50	50	100	30 Minutes per students

Lecture/Tutorials, P/I=Practical/Internship, CE =Continuous Evaluation, ESE = End Semester Evaluation

Course Description

Internship/ Field visit/ Vocational training aim to gain real work experience and provide meaningful assistance to the organizations, to gain experience and skills in a particular field, to develop professional contacts and to gain exposure to upper management. Vocational training provides practical education, so students develop specific industry skills that allow them to jump right into your profession and get started. The programme should be considered as a mentored component whereby faculty from teacher education institution called as faculty mentor and a member from host institution/association or organization known as field mentor together guide

TEACHING LEARNING STRATEGIES

The class will be taught by using the latest/innovative method and field work

MODE OF TRANSACTION

Demonstration/ Explanation/ Field work/ Learning by doing etc.

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ASSESSMENT RUBRICS

Evaluation Type		Marks
End Semester Evaluation		50
Continuous Evaluation		50
a)	Test Paper – 1 (Written/Oral)	10
b)	Test Paper – 2 (Written/Oral)	10
c)	Assignment Seminar Record Viva-Voce Any other relevant mode of evaluation	(Any three - each for 10 marks) 10 X 3 = 30 Marks
Total		100

SEMESTER VII

KU7DSCPES401: RESEARCH METHODS IN PHYSICAL EDUCATION AND SPORTS SCIENCES

Semester	Course Type	Course Level	Course Code	Credits	Total Hours
7	DSC	400	KU7DSCPES401	4	60

Learning Approach (Hours/ Week)			Marks Distribution			Duration of ESE (Hours)
Lecture	Practical/ Internship	Tutorial	CE	ESE	Total	
60	-	60	50	50	100	2 hours

Lecture/Tutorials, P/I=Practical/Internship, CE =Continuous Evaluation, ESE = End Semester Evaluation

Course Description

This course will enable students to understand the modern concept of research and statistics in physical education and sports. It aims to develop an understanding about the need for and importance of research in physical education and sports, research problems, survey of related literature, basics of statistical analysis and statistical models in physical education and sports.

Course Outcomes: At the end of the course, the student will be able to

CO No.	Expected outcome	Learning Domains
CO1	Understand the basic framework of the research process and approaches	U
CO2	Identify research problem	U,A
CO3	Classify and formulate different types and methods of research	U,A
CO4	Develop an understanding of various research designs and techniques.	A, AN
CO5	Identify correct methods for sample selection and techniques of data collection	A, An, E
CO6	Prepare the research proposal and develop skills for writing a thesis.	A, AN,C
CO7	Understand the concept of plagiarism and research ethics.	U,A

***Remember (K), Understand (U), Apply (A), Analyse (An), Evaluate (E), Create (C)**

Mapping of Course Outcomes to PSOs

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1			✓		✓	✓
CO2			✓		✓	✓
CO3			✓		✓	✓
CO4		✓	✓		✓	✓
CO5			✓		✓	✓
CO6		✓	✓		✓	✓
CO7		✓				✓

COURSE CONTENTS

Module 1: Introduction

Hours of transaction:10

- 1.1 Research meaning: Definition, need, nature and scope of research in the field of physical education, types of research.
- 1.2 Research problem, formulation and development, location of research problem, criteria in selecting the research problem.
- 1.3 Interdisciplinary, multidisciplinary, and transdisciplinary research.
- 1.4 Literature reviews definitions, importance, sources and types.

Suggested readings specific to the module.

- 1.1 Authors Guide (1991): Research Methods applied to Health Physical and Recreation, Washington, D.C.
- 1.2 Best John & Kahni, J.V. (1992). Research in Education, New Delhi. Prentice Hall of India (Pvt.) Ltd..
- 1.3 Best, J.W. (1963). Research in education. U.S.A.: Prentice Hall.
- 1.4 Clark, H. H., & Clark, D. H. (1975). Research process in physical education. Englewood cliffs, New Jersey: Prentice Hall, Inc.

Module 2: Research methods

Hours of transaction:15

- 2.1 Survey and case studies: Broad survey by questionnaire, development of questionnaire- interview, characteristics of interview. Case studies- need of case studies.
- 2.2 Philosophical studies-need for philosophical studies, nature of philosophical methods.

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2.3 Historical Research: Scope of Historical Research, Sources of Historical Data, Criticism of Historical Sources (Primary and Secondary)

2.4 Experimental research: Nature, meaning and importance, research design.

Suggested readings specific to the module.

2.1 Clark, H. H., & Clark, D. H. (1975). Research process in physical education. Englewood cliffs, New Jersey: Prentice Hall, Inc.

2.2 Koul, L. (2002). Methodology of Educational Research, Vikas Publishing House, New Delhi.

2.3 Oyster, C. K., Hanten, W. P., & Llorens, L. A. (1987). Introduction to research: A guide for the health science professional. London: J.B. Lippincott Company.

2.4 Thomas, J.R., & Nelson J.K. (2005). Research method in physical activity. U.S.A: Champaign, IL: Human Kinetics Books.

Module 3: Sampling

Hours of transaction:10

3.1 Meaning and Definition of Sample and Population

3.2 Advantages and Disadvantages of Sampling

3.3 Types of Sampling: Random sampling, systemic sampling, stratified sampling, clustered sampling, convenience sampling, quota sampling, judgement sampling and snowball sampling

3.4 Sampling and non-sampling errors

Suggested readings specific to the module.

3.1 Thomas, J.R., Nelson, J.K. & Silverman, S.J. (2011). Research method in physical activity. U.S.A: Champaign, IL: Human Kinetics Books.

3.2 Verma, J. P. (2000). A text book on sports statistics. Gwalior: Venus Publications.

3.3 Garrett, H.E. (1981). Statistics in psychology and education. New York: Vakils Feffer and Simon Ltd.

Module 4: Research Proposal and Report

Hours of transaction:15

4.1 Method of Writing Research Proposal (Introduction, Review of Related Literature, Methods, and Bibliography)

4.2 Method of Writing Thesis (Introduction, Review of Related Literature, Methods, results, and Discussion), Plagiarism and Ethics.

4.3 Preparation and Uses of Tables and Figures

4.4 Method of writing abstract and full paper for presenting at a conference and to publish in journal.

Suggested readings specific to the module.

4.1 Best John & Kahni, J.V. 1992). Research in Education, New Delhi. Prentice Hall of India (Pvt.) Ltd.

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4.2 Clark, H. H., & Clark, D. H. (1975). Research process in physical education. Englewood cliffs, New Jersey: Prentice Hall, Inc.

4.3 Koul, L. (2002). Methodology of Educational Research, Vikas Publishing House, New Delhi.

4.4 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.

Module 5: Teacher Specific Module

Hours of transaction:10

- The respective teacher will prepare the module content, allowing for adaptability in designing the material according to feasibility, prior modules, and pertinent information.

Core Compulsory readings

- Authors guide: Research Methods applied to Health Physical and Recreation, Washington, D.C. 1991.
- Best John & Kahni, J.V. (1992). Research in Education, New Delhi. Prentice Hall of India (Pvt.) Ltd..
- Best, J.W. (1963). Research in education. U.S.A.: Prentice Hall.
- Clark, H. H., & Clark, D. H. (1975). Research process in physical education. Englewood cliffs, New Jersey: Prentice Hall, Inc.
- Koul, L. (2002). Methodology of Educational Research, Vikas Publishing House, New Delhi.
- 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.
- Thomas, J.R., & Nelson J.K. (2005). Research method in physical activity. U.S.A: Champaign, IL: Human Kinetics Books.
- Thomas, J.R., Nelson, J.K. & Silverman, S.J. (2011). Research method in physical activity. U.S.A: Champaign, IL: Human Kinetics Books.
- Verma, J. P. (2000). A text book on sports statistics. Gwalior: Venus Publications.

Core suggested readings

- Garrett, H.E. (1981). Statistics in psychology and education. New York: Vakils Feffer and Simon Ltd.

TEACHING LEARNING STRATEGIES

- The class will be taught by using lectures and demonstration, seminars, classroom discussion, videos, charts and presentations method.

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MODE OF TRANSACTION

- Lecture//Laboratory Work/ Field Work/ Outreach Activities/ Project Work/ Vocational Training/Viva/ Seminars/ Term Papers/Assignments/ Presentations/ Self-Study etc.,

ASSESSMENT RUBRICS

Evaluation Type		Marks
End Semester Evaluation		50
Continuous Evaluation		50
a)	Test Paper – 1 (Written/Oral)	10
b)	Test Paper – 2 (Written/Oral)	10
c)	Assignment Seminar Record Viva-Voce Any other relevant mode of evaluation	(Any three - each for 10 marks) 10 X 3 = 30 Marks
Total		100

Sample Questions to test Outcomes.

1. Enumerate the main objectives of research and explain them in detail.?
2. Define the term 'Sampling'. Differentiate between sample and population ?
3. Distinguish between external criticism and internal criticism. Both types of criticism are essential in historical research and why?

Employability for the Course / Programme

- **Data analyst**
- **Research assistant**

SEMESTER VII**KU7DSCPES402–STATISTICAL APPLICATION IN PHYSICAL EDUCATION AND SPORTS**

Semester	Course Type	Course Level	Course Code	Credits	Total Hours
7	DSC	400	KU7DSCPES402	4	60

Learning Approach (Hours/ Week)			Marks Distribution			Duration of ESE (Hours)
Lecture	Practical/ Internship	Tutorial	CE	ESE	Total	
60	-	60	50	50	100	2 hrs

Course Description

This course introduces students to the intermediate concepts and techniques of data analysis. Students will learn how to collect and analyze data using various tools and methods. The course will cover topics such as data types, exploratory data analysis, hypothesis testing, basic regression analysis, statistical software and ethical considerations.

Course Outcomes: At the end of the course, the student will be able to

CO No.	Expected outcome	Learning Domains
CO1	Understand the techniques of data analysis	R,U
CO2	Understand the techniques to interpret data.	U,A
CO3	Understand the ethical issues related to statistical analysis and data interpretation	A, An
CO4	Analyze the data using statistical software	A, An, E

***Remember (R), Understand (U), Apply (A), Analyse (An), Evaluate (E), Create (C)**

Mapping of Course Outcomes to PSOs

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	✓	✓	✓	✓		✓
CO2	✓	✓	✓	✓		✓
CO3		✓	✓	✓		✓
CO4	✓	✓	✓			
CO5			✓	✓		✓
CO6		✓	✓	✓		✓

COURSE CONTENTS

Module 1: Review of Basic Statistics

Hours of transaction:10

- 1.1 Mean, median, mode
- 1.2 Standard deviation, variance
- 1.3 Probability distributions, hypothesis testing
- 1.4 Correlation

Suggested Reading specific to module

- 1.1 David Sheskin (2011) - Handbook of Parametric and Nonparametric Statistical Procedures, Fifth Edition – Taylor & Francis
- 1.2 Dr. M.R. Dhinu (2021) - Applied Statistics in Physical Education and Sports – Friends Publications (India)
- 1.3 William E. Martin, Krista D. Bridgmon (2012) - Quantitative and Statistical Research Methods – Wiley
- 1.4 Jim Frost (2020) - Introduction to Statistics – Statistics by Jim Publishing

Module 2: Regression Analysis

Hours of transaction:15

- 2.1 Linear regression
- 2.2 Multiple regressions
- 2.3 Logistic regression
- 2.4 Applications of regression analysis in physical education contexts

Suggested Reading specific to module

- 2.1 Michael Patrick Allen (1997). Understanding Regression Analysis. Springer US Publisher
- 2.2 Michael A. Golberg, Hokwon A. Cho (2004). Introduction to Regression Analysis. WIT Press Publisher

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2.3 Samprit Chatterjee, Ali S. Hadi (2006). Regression Analysis by Example. Wiley Publisher

2.4 Ashish Sen, Muni Srivastava (2012). Regression Analysis. Theory, Methods, and Applications. Springer New York Publisher

Module 3: Analysis of Variance (ANOVA)

Hours of transaction:15

3.1 One-way ANOVA

3.2 Factorial ANOVA

3.3 Repeated measures ANOVA

3.4 Applications of analysis of variance in comparing means across multiple groups

Suggested Reading specific to module

3.1 Sivaramakrishnan. S. (2006) Statistics for Physical Education, Delhi; Friends Publication

3.2 Thirumalaisamy (1998). Statistics in Physical Education, Karaikudi, Senthil Kumar Publications

3.3 David Sheskin (2011) - Handbook of Parametric and Nonparametric Statistical Procedures, Fifth Edition – Taylor & Francis

3.4 Arnel Dawson (2018) - Research methods and Statistics in Physical Education – ETP

Module 4: Statistical Software and Ethical Considerations

Hours of transaction:10

4.1 Statistical software R and its interpretation

4.2 Statistical software SPSS and its interpretation

4.3 Ethical issues related to statistical analysis and data interpretation

4.4 Data manipulation, p-hacking, and conflicts of interest.

Suggested Reading specific to module

4.1 Norman S. Matloff (2011)The Art of R Programming. A Tour of Statistical Software Design. No Starch Press Publisher

4.2 J.P. Verma (2012). Data Analysis in Management with SPSS Software. Springer India Publisher

4.3 Sorin Adam Matei, Jeff Collmann (2016). Ethical Reasoning in Big Data. An Exploratory Analysis. Springer International Publishing

4.4 Thomas W. O’Gorman (2004) - Applied Adaptive Statistical Methods: Tests of Significance – SIAM Publishers

Module 5 : Teacher Specific Module

Hours of transaction:10

- The respective teacher will prepare the module content, flexibly designing the material according to feasibility, prior modules, and pertinent

Core Compulsory Readings

1. Jerry R. Thomas, Philip Martin, Jennifer L. Etnier (2022) - Research Methods in Physical Activity – Human Kinetics
2. Michael Patrick Allen (1997). Understanding Regression Analysis. Springer US Publisher
3. Pierre Lafaye de Micheaux, Rémy Drouilhet, Benoit Lique (2014). The R Software. Fundamentals of Programming and Statistical Analysis. Springer New York Publisher
4. Norman S. Matloff (2011) The Art of R Programming. A Tour of Statistical Software Design. No Starch Press Publisher
5. J.P. Verma (2012). Data Analysis in Management with SPSS Software. Springer India Publisher
6. Sorin Adam Matei, Jeff Collmann (2016). Ethical Reasoning in Big Data. An Exploratory Analysis. Springer International Publishing

Core Suggested Readings

1. Sivaramakrishnan. S. (2006) Statistics for Physical Education, Delhi; Friends Publication
2. Thirumalaisamy (1998). Statistics in Physical Education, Karaikudi, Senthil Kumar Publications
3. Daniela Forrero, Gretchen L. Mathew (2021) - Research Trends in Graph Theory and Applications – Springer International Publishing
4. David Sheskin (2011) - Handbook of Parametric and Nonparametric Statistical Procedures, Fifth Edition – Taylor & Francis
5. Arnel Dawson (2018) - Research methods and Statistics in Physical Education – ETP
6. Richard G Lomax, Debbie L. Hahs-Vaughn (2013) - An introduction to statistical concepts: Third edition – Taylor & Francis
7. Wlodzimierz Bryc (1995) - The Normal Distribution – 3Island Press
8. Arnel Dawson (2018) - Research Methods and Statistics in Physical Education – ETP
9. Thomas W. O’Gorman (2004) - Applied Adaptive Statistical Methods: Tests of Significance – SIAM Publishers
10. William E. Martin, Krista D. Bridgmon (2012) - Quantitative and Statistical Research Methods – Wiley
11. Sivaramakrishnan. S. (2006) Statistics for Physical Education, Delhi; Friends Publication
12. Thomas, J.R., & Nelson J.K. (2005). Research method in physical activity. U.S.A: Champaign, IL: Human Kinetics Books.

TEACHING LEARNING STRATEGIES

- The class will be taught by using lectures and demonstration, seminars, classroom discussion, videos, charts and presentations method.

MODE OF TRANSACTION

- Lecture//Laboratory Work/ Field Work/ Outreach Activities/ Project Work/ Vocational Training/Viva/ Seminars/ Term Papers/Assignments/ Presentations/ Self-Study etc.,

ASSESSMENT RUBRICS

Evaluation Type		Marks
End Semester Evaluation		50
Continuous Evaluation		50
a)	Test Paper – 1 (Written/Oral)	10
b)	Test Paper – 2 (Written/Oral)	10
c)	Assignment Seminar Record Viva-Voce Any other relevant mode of evaluation	(Any three - each for 10 marks) 10 X 3 = 30 Marks
Total		100

Sample Questions to test Outcomes

1. What is Analysis of Variance (ANOVA), and when is it used in statistical analysis?
2. Explain the difference between one-way ANOVA and two-way ANOVA, and provide examples of situations where each would be applicable.
3. What is regression analysis, and how is it used to analyze relationships between variables?
4. Explain the difference between simple linear regression and multiple linear regression
5. Explain the process of data importation, cleaning, and manipulation using statistical software.

SEMESTER VII

KU7DSCPES403: ETHICS, ACADEMIC INTEGRITY, AND ACADEMIC WRITING

Semester	Course Type	Course Level	Course Code	Credits	Total Hours
7	DSC	400	KU7DSCPES403	4	60

Learning Approach (Hours/ Week)			Marks Distribution			Duration of ESE (Hours)
Lecture	Practical/ Internship	Tutorial	CE	ESE	Total	
60	-	60	50	50	100	2 hrs

Lecture/Tutorials, P/I=Practical/Internship, CE =Continuous Evaluation, ESE = End Semester Evaluation

Course Description

This course provides a comprehensive exploration of the ethical and philosophical foundations essential for conducting scientific research with integrity. Covering topics such as ethical considerations, scientific misconduct, publication ethics, and research metrics, students will gain a nuanced understanding of the principles guiding scholarly inquiry and publication practices in contemporary academia

Course Outcomes: At the end of the course, the student will be able to-

CO No.	Expected outcome	Learning Domains
CO1	Understand the scope and nature of philosophy and its relevance to scientific inquiry. It also helps in Identifying and evaluating the ethical considerations within scientific research, emphasizing the importance of intellectual honesty and integrity.	U,R
CO2	Understand the publication ethics and its significance in ensuring the integrity of scholarly communication. And evaluate authorship and contributorship issues, including identification of misconduct and procedures for lodging complaints and appeals.	U,R,A

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CO3	Examine subject-specific ethical issues within various disciplines, highlighting instances of FFP and other misconduct and analyze authorship practices and conflicts of interest in scholarly publishing, emphasizing ethical guidelines and best practices.	A,An
CO4	Understand and explore various citation databases, analyze their features and functionalities, also evaluate various research metrics in assessing scholarly impact. Discuss alternative metrics and their utility in measuring research influence beyond traditional citation metrics.	U,E,An

***Remember (R), Understand (U), Apply (A), Analyse (An), Evaluate (E), Create (C)**

Mapping of Course Outcomes to PSOs

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	✓	✓	✓	✓	✓	✓
CO2	✓	✓	✓	✓	✓	
CO3		✓	✓	✓	✓	
CO4	✓	✓	✓		✓	
CO5			✓	✓	✓	✓
CO6		✓	✓	✓	✓	✓

COURSE CONTENTS

Module 1: Philosophy, Ethics and Scientific Conduct Hours of transaction:15

- 1.1** Introduction to philosophy: definition, nature and scope, concept, branches. Ethics: definition, Moral philosophy,
- 1.2** Nature of moral judgments and reactions. Ethics concerning science and research, Intellectual honesty, and research integrity
- 1.3** Scientific misconducts: Falsification, Fabrication, and Plagiarism (FFP)
- 1.4** Redundant publications: duplicate and overlapping publications, salami slicing, Selective reporting and misrepresentation of data.

Suggested readings specific to the module.

- 1.1** *Hendricks and Matthews (2020): Introduction to Philosophy: Ethics*
- 1.2** *Darwell (2018): Philosophical Ethics: An Historical and Contemporary Introduction.*

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1.3 Adkins (2017): *Guide to Ethics and Moral Philosophy*

1.4 Kulpe (2018): *Introduction to Philosophy: A Handbook for Students of Psychology, Logic, Ethics, Aesthetics and General Philosophy*

1.5 Perry, Bratman, Fischer (2021): *Introduction to Philosophy*

Module 2: Publication Ethics and Open Access Publishing

Hours of transaction:15

2.1 Publication ethics: definition, introduction, and importance; Best practices/standards setting initiatives and guidelines: COPE, WAME,

2.2 Conflicts of interest; Publication misconduct: definition, concept, problems that lead to unethical behavior and vice versa, types,

2.3 Violation of publication ethics, authorship and contributor ship; Identification of publication misconduct, complaints and appeals, Predatory publishers and journals.

2.4 Open access publications and initiatives and Software tool to identify predatory publications

Suggested readings specific to the module

2.1 Iphofen (2020): *Handbook of Research Ethics and Scientific Integrity*

2.2 Koepsell (2016): *Scientific Integrity and Research Ethics: An Approach from the Ethos of Science*

2.3 Shamo, Resnik (2009): *Responsible Conduct of Research*

2.4 Erwin, Gendin, Kleiman (2015): *Ethical Issues in Scientific Research: An Anthology*

Module 3: Publication Misconduct

Hours of transaction:10

3.1 Subject-specific ethical issues, FFP

3.2 Authorship, Conflicts of Interest

3.3 Complaints and appeals

3.4 Use of plagiarism software like Turnitin, Urkund and other open-source software tools

Suggested readings specific to the module

3.1 Kanna (2023): *Research and Publication Ethics*

3.2 Pratap, Ahlawat, Sharma (2023): *Research and Publication Ethics*

3.3 Danver (2016): *The SAGE Encyclopedia of Online Education*

3.4 Comstock (2013): *Research Ethics: A Philosophical Guide to the Responsible Conduct of Research*

Module 4: Databases and Research Metrics

Hours of transaction:10

4.1 Definition of Databases Indexing databases

4.2 Citation databases: Web of Science, Scopus, etc.

4.3 Definition of Research Metrics, Impact Factor of journal as per

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Journal Citation Report, SNIP, SJR, IPP, Cite Score.

4.4 Metrics: h-index, g index, i10 index, Altimetrics.

Suggested readings specific to the module

4.1 *Siau (2011): Journal of Database Management (Jdm) – Issue 1.*

4.2 *Lichtfouse (2013): Scientific Writing for Impact factor Journals.*

4.3 *Braun (2007): The Impact Factor of Scientific and Scholarly Journals: Its Use and Misuse in Research Evaluation.*

4.4 *Singh and Dubey (2021): Introduction of Research Methods and Publication Ethics*

Module 5: Teacher Specific Module

Hours of transaction:10

- The respective teacher will prepare the module content, flexibly designing the material according to feasibility, prior modules, and pertinent information.

Core Compulsory Readings

1. *Haven (1859): Moral Philosophy: Including Theoretical and Practical Ethics*
2. *Willians (2011): Ethics and the Limits of Philosophy*
3. *Salter (1891): Ethics and Philosophy.*
4. *Herman and Rawls (2000) Lectures on the History of Moral Philosophy*
5. *Ochsner (2013): Introduction to Scientific Publishing: Backgrounds, Concepts and Strategies.*
6. *IItis (2006): Research Ethics*
7. *Yadav (2023): Research and publication Ethics.*
8. *Baishya and Ahuja (2024): Research and Publication Ethics*
9. *Follette (1988): Ethical Misconduct in Research Publication: An Annotated.*
10. *Montoneri (2020): Academic Misconduct and Plagiarism: Case Studies from Universities around the World.*

Core Suggested Readings

1. *The Ethics of Teaching and Scientific Research By Miro Todorovich; Paul Kurtz; SidneyHook.*
2. *Research Ethics: A Psychological Approach By Barbara H. Stanley; Joan E. Sieber; GaryB.Melton*
3. *Research Methods in Applied Settings: An Integrated Approach to Design and Analysis by Jeffrey A. Gliner; George A. Morgan Lawrence Erlbaum Associates, 2000*
4. *Ethics and Values in Industrial-Organizational Psychology By Joel*

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Lefkowitz Lawrence Erlbaum Associates, 2003.

5. *Gupta and Kamboj (2020): Research and Publication Ethics*

6. *Pratap, Ahlawat, Sharma (2023): Research and Publication Ethics*

TEACHING LEARNING STRATEGIES

- The class will be taught by using lectures and demonstration, seminars, classroom discussion, videos, charts and presentations method.

MODE OF TRANSACTION

- Lecture//Laboratory Work/ Field Work/ Outreach Activities/ Project Work/ Vocational Training/Viva/ Seminars/ Term Papers/Assignments/ Presentations/ Self-Study etc.,

ASSESSMENT RUBRICS

Evaluation Type		Marks
End Semester Evaluation		50
Continuous Evaluation		50
a)	Test Paper – 1 (Written/Oral)	10
b)	Test Paper – 2 (Written/Oral)	10
c)	Assignment Seminar Record Viva-Voce Any other relevant mode of evaluation	(Any three - each for 10 marks) 10 X 3 = 30 Marks
Total		100

Sample Questions to test Outcomes.

1. How does understanding the philosophical understanding of scientific inquiry contribute to maintaining integrity in research practices?
2. What measures can be implemented to address conflicts of interest and prevent publication misconduct in scholarly research?
3. How can the utilization of plagiarism detection software contribute to maintaining research integrity and preventing publication misconduct?
4. What are the implications of utilizing alternative research metrics, such as altmetrics, in assessing the impact of scholarly publications?

SEMESTER VII

KU7DSCPES404(P) – SPECIALIZATION (FOOTBALL)

Semester	Course Type	Course Level	Course Code	Credits	Total Hours
7	DSC	400	KU7DSCPES404	4	105

Learning Approach (Hours/ Week)			Marks Distribution			Duration of ESE (Hours)
Lecture	Practical/ Internship	Tutorial	CE	ESE	Total	
15	90	105	50	50	100	30 minutes per student

Lecture/Tutorials, P/I=Practical/Internship, CE =Continuous Evaluation, ESE = End Semester Evaluation

Course Description

The course Practicum- Football Specialization is designed to provide an opportunity for the students to provide a comprehensive understanding of practical skills in football including techniques, tactics, fitness, and leadership. Through practical training sessions, students will develop their abilities as football players and potentially as coaches.

Course Outcomes: At the end of the course, the student will be able to-

CO No.	Expected outcomes	Learning Domains
CO1	Understand, analyze, and implement tactical principles and strategies	R,U,An,A
CO2	Understand the principles of team management and organization	U,An
CO3	Understand the techniques to assess opponents, identify strengths and weaknesses	U,A,An
CO4	Identify common football injuries, design and implement injury prevention program	E,C

***Remember (R), Understand (U), Apply (A), Analyse (An), Evaluate (E), Create**

Mapping of Course Outcomes to PSOs						
	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	✓		✓		✓	
CO2	✓	✓	✓	✓	✓	
CO3	✓		✓	✓	✓	✓
CO4	✓	✓	✓		✓	✓

COURSE CONTENTS

Module 1: Introduction to football fundamentals

- 1.1 Introduction to football history, Basic rules and regulations, Introduction to coaching principles
- 1.2 Development and fitness(warm-up exercise and stretching routines, Fitness training, strength and conditioning)
- 1.3 Basic dribbling and ball control technique, Proper passing techniques, receiving ball under pressure
- 1.4 Shooting techniques and finishing drills , Advanced goalkeeping drills

Suggested Reading specific to module

- 1.1 Ditmer ,Warner Krutsch - *Football Fitness Training: A Scientific Approach*
- 1.2 Greg Gatz - *Complete Conditioning for Soccer*
- 1.3 American Football Coaches Association – *The Football Coaching Bible*
- 1.4 Hand book- FIFA, *The Law of the Game*

Module 2: Offensive and Defensive Principles

- 2.1 Principles of offending and principles of defending
- 2.2 1v1, 2v2, 3v2, 3v3 attacking, 1v1, 2v2, 3v3 defending
- 2.3 Goal scoring drills
- 2.4 Tactical analysis and strategy of offensive and defensive, set pieces and tactical skill

Suggested Reading specific to module

- 2.2 Rick Trickett- *Complete Offensive line*
- 2.3 Buxton, Drewitt, Jim (2009)- *Football Skill*
- 2.4 Paul Mccord – *101 special Teams Drills*
- 2.5 Lal D. C (2007) – *Skill and Tactics football*

Module 3: Tactical Understanding

- 3.1 Introduction to tactical formations (4-4-2, 4-3-3, 3-5-2 etc)
- 3.2 Advanced coaching techniques, Offensive and defensive strategies
- 3.3 Tackling techniques and drills, importance of team work in football
- 3.4 Team building exercise and group activities, Match preparation and

game analysis

Suggested Reading specific to module

- 3.1 Mark A. Schuster –Coaching the Defensive Secondary
- 3.2 Jerry Tolley, Mack Brown – The Complete Book of Defensive Football Drills
- 3.3 Trimble, Allan (2000) – Coaching Football Successfully
- 3.4 Buxton, Drewitt, Jim (2009)- Football Skill

Module 4: Management and injury prevention strategies

- 4.1 Roles and responsibilities of football managers and coaches
- 4.2 Sports management in football, Marketing and branding
- 4.3 Match Officiating
- 4.4 Injury prevention and rehabilitation, Post-match recovery, Nutrition, Hydration, sleep

Suggested Reading specific to module

- 4.1 *Luxbacher ,Joe – Chuck Myers, Mike Leach – The Complete Handbok of Coaching Wide Receivers*
- 4.2 *Utpal Ganguli- Coaching youth football: A comprehensive guide for Coaches of 6-11 year olds*
- 4.3 *Mcavoy, Nelson (1998) -Teaching Soccer Fundamentals*
- 4.4 *Drew Tallman- Football Coach’s Guide to A high Scoring Passing Offense*
- 4.5 *Jerry Tolley, Mack Brown – The Complete Book of Defensive Football Drills*

Core Compulsory Readings

- Ditmer ,Warner Krutsch ,Football Fitness Training: A Scientific Approach
- Utpal Ganguli-Coaching youth football: A comprehensive guide for coaches of 6-11 year olds
- Mcavoy, Nelson (1998) -Teaching soccer fundamentals
- Greg Gatz .Complete Conditioning for Soccer
- Lal D. C (2007) – Skill and Tactics football
- Drew Tallman- Football Coach’s Guide to A high Scoring Passing Offense
- Jerry Tolley, Mack Brown – The Complete Book of Defensive Football Drills

TEACHING LEARNING STRATEGIES

- The content will be taught by using demonstration, explanation,

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presentation methods, videos, learning by doing, Whole part whole method Drills.

MODE OF TRANSACTION

- Practice of Techniques/ learning by doing/ Individual Practice etc.

ASSESSMENT RUBRICS

Evaluation Type		Marks
End Semester Evaluation		50
Continuous Evaluation		50
a)	Test Paper – 1 (Written/Oral)	10
b)	Test Paper – 2 (Written/Oral)	10
c)	Assignment Seminar Record Viva-Voce Any other relevant mode of evaluation	(Any three - each for 10 marks) 10 X 3 = 30 Marks
Total		100

SEMESTER VII

KU7DSCPES404 (P)–SPECIALIZATION (SWIMMING)

Semester	Course Type	Course Level	Course Code	Credits	Total Hours
7	DSC	400	KU7DSCPES404	4	105

Learning Approach (Hours/ Week)			Marks Distribution			Duration of ESE (Hours)
Lecture	Practical/ Internship	Tutorial	CE	ESE	Total	
15	90	105	50	50	100	30 minutes per student

Lecture/Tutorials, P/I=Practical/Internship, CE =Continuous Evaluation, ESE = End Semester Evaluation

Course Description

This course is designed to learn basic stroke and its drills, skill refinement techniques, different breathing techniques, and teaching lessons. The course will include theoretical and practical components, emphasizing skill acquisition and confidence- building in the water.

Course Pre- requisite: Those who have completed the basic swimming course

Course Outcome

Course Outcomes: At the end of the course, the student will be able to-

CO No.	Expected outcome	Learning Domains
CO1	Learn basic stroke and its drills	U,A
CO2	Understand the progressive training methods in swimming	U,An
CO3	Increase their efficiency in swimming	AN,E
CO4	learn the proper teaching methods for swimming	A,E,C

***Remember (R), Understand (U), Apply (A), Analyse (An), Evaluate (E), Create (C)**

Mapping of Course Outcomes to PSOs

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1				✓		
CO2	✓	✓		✓		
CO3	✓	✓		✓		
CO4		✓	✓	✓	✓	

COURSE CONTENTS

Module 1: Basic stroke and its drills

Hours of transaction:25

- 1.1 Freestyle and backstroke (Drills:- Catch-Up Drill, Backstroke Arms with Flutter Kick)
- 1.2 Breaststroke and Butterfly (Drills:- Breaststroke Kick on Back, Drill: Dolphin Kick with Fins)
- 1.3 Flip Turns (Drill: Flip Turn Progression Drill)
- 1.4 Open Turns (Drill: Open Turn Drill)

Suggested Reading specific to the module

- 1.1 Mark Young (2014). *The Swimming Strokes Book. Easy exercises for learning how to swim the four basic swimming strokes. Educate and Learn Publishing*
- 1.2 Sheila Taormina (2014). *Swim Speed Strokes for Swimmers and Tri athletes. Master Freestyle, Butterfly, Breaststroke and Backstroke for Your Fastest Swimming (Swim Speed Series):Velo Press Publisher*
- 1.3 Michael Brooks (2019). *Developing swimmers. Human Kinetics*
- 1.4 Cecil Colwin (2002) *Breakthrough Swimming. Human Kinetics*

Module 2: Skill refinement Techniques

Hours of transaction:25

- 2.1 Video Analysis, Feedback and Correction
- 2.2 Progressive Training, Visualization,
- 2.3 Dryland Training, Biomechanical Analysis
- 2.4 Peer Learning, Consistent Practice and Goal Setting

Suggested Reading specific to the module

- 2.1 [Alan Lynn](#) (2014). *Swimming Technique, Training, Competition Strategy. Crowood Press Publisher*
- 2.2 [JoeFriel](#) (2024). *The Triathlete's Training Bible. The World's Most Comprehensive Training Guide, 5th Edition. VeloPress Publisher*

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2.3 [Paul Newsome, Adam Young](#) (2012) *Swim Smooth the Complete Coaching System for Swimmers and Triathletes.* [Wiley](#) Publisher

2.4 [Scott Bay](#) (2016). *Swimming Steps to Success.* [Human Kinetics](#)

Module 3: Breathing techniques in swimming

Hours of transaction:30

3.1 Bilateral Breathing

3.2 Rhythmic Breathing

3.3 Breathing from the Side

3.4 Exhalation Underwater and Quick Inhalation

Suggested Reading specific to the module

3.1 [Charles Rob Orr, Jane B. Tyler, Bill Gow, Emmett Wilson](#) (1980). *Swimming Basics* [Prentice-Hall](#) Publisher

3.2 [Sam Humphries](#) (2022) *Be a Fish The swim coaching bible to teach you to swim like a pro via swimming training, swim drills, swimmers speed secret lessons, speed strokes for beginners, adults, teens, kids, girls & boys.* Ebook

3.3 [Michael Brooks](#) (2019). *Developing swimmers.* [Human Kinetics](#)

3.4 [Cecil Colwin](#) (2002) *Breakthrough Swimming.* [Human Kinetics](#)

Module 4: Teaching lessons

Hours of transaction:25

4.1 Warm-up Activities (Simple floating exercises, gentle kicking drills and arm movements) and Fundamental Skills (Floating, kicking, arm strokes, breathing techniques)

4.2 Main part (selected stroke practice)

4.3 Fun and Games (relay races, treasure hunts, or water polo)

4.4 Cool Down and Reflection (Easy Swimming, Floating Relaxation, Arm Stretches, leg stretch, Neck roll, Deep Breathing)

Suggested Reading specific to the module

4.1 [Mark Young](#) (2021). *101 Swimming Lesson Plans for Swimming Teachers.* [Educate and Learn Publishing](#)

4.2 [Maud Robertson Ramsay Nomiya](#) (2014). *You Can Swim, But Can You Teach It?* [Strategic Book Publishing](#)

4.3 [Jeffrey Napolski](#) (2018). *Teaching Swimming Fun and Effective Instruction.* [Independently Published](#)

4.4 [Monica Lepore, Luis Columna, Lauren Friedlander Litzner](#) (2015). *Assessments and Activities for Teaching Swimming.* [Human Kinetics](#)

Core Compulsory Readings

1. [Mark Young](#) (2014). *The Swimming Strokes Book.* Easy exercises for

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learning how to swim the four basic swimming strokes. Educate and Learn Publishing

2. Sheila Taormina (2014). Swim Speed Strokes for Swimmers and Triathletes. Master Freestyle, Butterfly, Breaststroke and Backstroke for Your Fastest Swimming (Swim Speed Series): Velo Press Publisher

3. Michael Brooks (2019). Developing swimmers. Human Kinetics

4. Cecil Colwin (2002) Breakthrough Swimming. Human Kinetics

5. [Scott Bay](#) (2016). Swimming Steps to Success. [Human Kinetics](#)

Core Suggested Readings

1. [Mark Young](#) (2021). 101 Swimming Lesson Plans for Swimming Teachers. [Educate and Learn Publishing](#)

2. [Paul Newsome](#), [Adam Young](#) (2012) Swim Smooth the Complete Coaching System for Swimmers and Triathletes. [Wiley](#) Publisher

3. "Swim Lessons: Teach Yourself to Swim" by Bill and Judy Brewster

TEACHING LEARNING STRATEGIES

- The content will be taught by using demonstration, explanation, presentation methods, videos, learning by doing, whole part whole method drills.

MODE OF TRANSACTION

- Practice of Techniques/ learning by doing/ Individual Practice etc.

ASSESSMENT RUBRICS

Evaluation Type		Marks
End Semester Evaluation		50
Continuous Evaluation		50
a)	Test Paper – 1 (Written/Oral)	10
b)	Test Paper – 2 (Written/Oral)	10
c)	Assignment Seminar Record Viva-Voce Any other relevant mode of evaluation	(Any three - each for 10 marks) 10 X 3 = 30 Marks
Total		100

Sample Questions to test Outcomes.

1. What are the primary breathing techniques used in swimming?
2. How does bilateral breathing differ from unilateral breathing in swimming?
3. What are some common mistakes swimmers make when it comes to breathing?
4. What are the skill refinement techniques used to improve swimming efficiency?
5. How does focusing on body alignment contribute to skill refinement in swimming?
6. Can you explain the concept of "catch and pull" and its importance in

stroke technique refinement?

Employability for the Course / Programme

- Swimming instructor
- Swimming coach

SEMESTER VII

KU7DSCPES404 (P)–SPECIALIZATION (TRACK AND FIELD)

Semester	Course Type	Course Level	Course Code	Credits	Total Hours
7	DSC	400	KU7DSCPES404	4	105

Learning Approach (Hours/ Week)			Marks Distribution			Duration of ESE (Hours)
Lecture	Practical/ Internship	Tutorial	CE	ESE	Total	
15	90	105	50	50	100	30 minutes per student

Lecture/Tutorials, P/I=Practical/Internship, CE =Continuous Evaluation, ESE = End Semester Evaluation

Course Description

The course of Practicum- track, and field 400 level, is so designed to allow the students to specialize in track field events. The course will include theoretical and practical components, emphasizing combined events, skill refinement techniques in jumping events, skill refinement techniques in throwing events, and teaching lessons of all the events.

Course Pre- requisite: Those who have completed the basic Track and Field course

Course Outcomes: At the end of the course, the student will be able to

CO No.	Expected outcome	Learning Domains
CO1	Understand the historical evolution combined events	R,U
CO2	Understand the Skill refinement Techniques in a jumping event	U
CO3 m	Understand the Skill refinement Techniques in throwing events	U
CO4	learn the proper teaching methods for track and field events	An,A,

***Remember (R), Understand (U), Apply (A), Analyse (An), Evaluate (E), Create (C)**

Mapping of Course Outcomes to PSOs

	PSO1	PSO2	PSO3	PSO4	PSO5	PO6
CO1	✓					
CO2		✓				
CO3	✓	✓				
CO4	✓	✓		✓		

COURSE CONTENTS

Module 1: Combined Events

Hours of transaction:25

- 1.1 Historical evolution and significance
- 1.2 Multi event competition rules
- 1.3 Points awarded system
- 1.4 Periodization for combined events athletes

Suggested Reading specific to the module

- 1.1 American Sport Education Program (2008). Coaching Youth Track and Field. [Human Kinetics](#)
- 1.2 David Lease (1999). Combined Events. [UK Athletics](#) Publisher
- 1.3 Gerald A. Carr (1999). Fundamentals of Track and Field. [Human Kinetics](#)
- 1.4 Tudor O. Bompa, Carlo Buzzichelli (2015). Periodization Training for Sports. [Human Kinetics](#)

Module 2: Skill refinement Techniques in jumping event

Hours of transaction:25

- 2.1 Long Jump (Master the approach run, takeoff mechanics. polymeric exercises to improve explosive power and reactive strength, body position during flight, leg extension and control, analyzes of video footage to identify areas for improvement and refine technique)
- 2.2 Triple Jump (Master the approach run, takeoff mechanics. polymetric exercises to improve explosive power and reactive strength, body position during flight, leg extension and control, analyzes of video footage to identify areas for improvement and refine technique)
- 2.3 High Jump (Takeoff drill, vertical jump ability through strength training and polymetric exercises. bar clearance technique, arching over the bar and driving the legs up)
- 2.4 Pole Vault (Master the pole plant and swing technique, ensuring proper timing and control, upper body strength and core stability exercises and drills, runway approach and takeoff angles, bar clearance technique)

Suggested Reading specific to the module

- 2.1 Jim Santos, Ken Shannon (1989). *Track: The Field Events*. [Sports Illustrated](#) Publisher
- 2.2 USA Track & Field (2015) - *Track & Field Coaching Essentials – Human Kinetics*
- 2.3 Jay Silvester (2003). *Complete Book of Throws*
- 2.4 Michael J Pellet. *Track and Field Made Understandable: The Throwing Events: Practice Edition Paperback*

Module 3: Skill refinement Techniques in throwing event

Hours of transaction:25

- 3.1 Shot Put (proper grip and positioning of the shot put, Master the rotational or glide technique, the release, footwork and balance to maintain stability)
- 3.2 Discus Throw (grip and finger positioning on the discus, winding technique to generate torque and rotational momentum, transition from winding to the power position, the release, maintaining balance and the posture)
- 3.3 Javelin Throw (Master the grip and javelin positioning, approach run, crossover and block phases to transfer energy from the lower body to the javelin, the release, footwork and balance)
- 3.4. Hammer Throw (mastering the grip and winding technique, exercises for lower body strength and explosive power, the release, maintaining balance and the posture)

Suggested Reading specific to the module

- 3.1** USA Track & Field (2015) - *Track & Field Coaching Essentials – Human Kinetics*
- 3.2** Jay Silvester (2003)*Complete Book of Throws*
- 3.3** Michael J Pellet. *Track and Field Made Understandable: The Throwing Events: Practice Edition Paperback*
- 3.4** Jay Silvester (2003)*Complete Book of Throws*

Module 4: Teaching lessons

Hours of transaction:35

- 4.1 Warm-up activities (Start with a light jog around the track or designated area to increase heart rate and warm up muscles, dynamic stretching exercises targeting major muscle groups, joint mobility exercises to improve range of motion and flexibility)
- 4.5** Main part (skill instruction, demonstration and practice drills of the selected event)
- 4.6** Fun and games (mini-races or any fun game to apply newly learned skills)
- 4.4 Cool down and reflection (light jog or cool down walk to gradually lower heart rate and prevent muscle stiffness, static stretching exercises)

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targeting major muscle groups)

Suggested Reading specific to the module

- 4.1 [Joseph L. Rogers](#) (2000). USA Track & Field Coaching Manual. [Human Kinetics](#)
- 4.2 [Aeras Publishing, Carol Jahan](#) (2010). Physical Education Lesson Plans for Classroom Teachers-Grades 4-6. [Aeras Publishing](#)
- 4.3 [American Sport Education Program](#) (2008). Coaching Youth Track and Field. [Human Kinetics](#)
- 4.4 [Gerald A. Carr](#) (1999). Fundamentals of Track and Field. [Human Kinetics](#)

Core Compulsory Readings

1. [Joseph L. Rogers](#) (2000). USA Track & Field Coaching Manual. [Human Kinetics](#)
2. [Kevin Morgan](#) (2013). Athletics Challenges. A Resource Pack for Teaching Athletics. [Taylor & Francis](#)
3. [Vern Gambetta](#) (1981). Track and Field Coaching Manual. Coaching Techniques and Guidelines Formulated by the Athletics Congress' Olympic Development Committee. [Leisure Press](#) publishes
4. [Emily Schlesinger](#) (2024). Track and Field. [Saddleback Educational Publishing](#)
5. [Tudor O. Bompa, G. Gregory Haff](#) (2018). Periodization. Theory and Methodology of Training. [Human Kinetics](#)
6. USA Track & Field (2015) - Track & Field Coaching Essentials – Human Kinetics

Core Suggested Readings

1. [Vanaik A.](#) (2017). Officiating and Coaching, Friends Publication. New Delhi.
2. [Renwick GR](#) (2001). Play Better Athletics. Sports Pub, Delhi.
3. [Nick Newman](#) (2012). The Horizontal Jumps. Planning for Long Term Development. [CreateSpace Independent Publishing Platform](#)
4. [Gupta R.](#) (2004). Layout & Marking of Track & Field. Friends Publications. India. New Delhi.
5. Handbook-Rules and Regulation. International Athletic Federation (2010).
6. [Eugene Shane Lee, Jeremiah Whitefield](#) (2010) - Fundamentals of Sprinting – A guide for Sprinters – Xlibris U S
7. [Graeme Foreman, Andy Bradshaw](#) (2009) - An Introduction to Fundamentals of Movement – Coachwise

TEACHING LEARNING STRATEGIES

- The content will be taught by using demonstration, explanation, presentation methods, videos, learning by doing, Whole part whole method Drills.

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MODE OF TRANSACTION

- Practice of Techniques/ learning by doing/ Individual Practice etc.

ASSESSMENT RUBRICS

Evaluation Type		Marks
End Semester Evaluation		25
a)	Skill proficiency	15
b)	Record file	5
c)	Viva	5
Continuous Evaluation		25
a)	Skill proficiency	15
b)	Record file/Field Visit/Project Report	5
c)	Viva	5
Total		50

Sample Questions to test Outcomes.

1. What are the eligibility requirements for athletes to participate in combined events competitions at the international level?
2. Can athletes compete in both heptathlon and decathlon events within the same championship or competition?
3. What is the purpose of creating a lesson plan?
4. How does an athlete generate power and velocity in throwing events such as shot put or javelin?

Employability for the Course / Programme

- **Athlete trainer**
- **Sports trainer**
- **Athletics coach**

SEMESTER VII

KU7INTPES401: INTERNSHIP/ FIELD VISIT/ VOCATIONAL TRAINING

Semester	Course Type	Course Level	Course Code	Credits	Total Hours
7	Internship/field visit	200	KU7INTPES401	4	120

Learning Approach (Hours/ Week)			Marks Distribution			Duration of ESE (Hours)
Lecture	Practical/ Internship	Tutorial	CE	ESE	Total	
	120		50	50	100	30 minutes per student

Lecture/Tutorials, P/I=Practical/Internship, CE =Continuous Evaluation, ESE = End Semester Evaluation

Course Description

Internship/ Field visit/ Vocational training aim to gain real work experience and provide meaningful assistance to the organizations, to gain experience and skills in a particular field, to develop professional contacts and to gain exposure to upper management. Vocational training provides practical education, so students develop specific industry skills that allow them to jump right into your profession and get started. The programme should be considered as a mentored component whereby faculty from teacher education institution called as faculty mentor and a member from host institution/association or organization known as field mentor together guide

TEACHING LEARNING STRATEGIES

The class will be taught by using the latest/innovative method and field work

MODE OF TRANSACTION

Demonstration/ Explanation/ Field work/ Learning by doing etc.

ASSESSMENT RUBRICS

Evaluation Type		Marks
End Semester Evaluation		50
Continuous Evaluation		50
a)	Test Paper – 1 (Written/Oral)	10
b)	Test Paper – 2 (Written/Oral)	10
c)	Assignment Seminar Record Viva-Voce Any other relevant mode of evaluation	(Any three - each for 10 marks) 10 X 3 = 30 Marks
Total		100

SEMESTER VII**KU7DSEPES401: BIOMECHANICS IN SPORTS AND EXERCISE**

Semester	Course Type	Course Level	Course Code	Credits	Total Hours
7	DSC	400	KU7DSEPES401	4	60

Learning Approach (Hours/ Week)			Marks Distribution			Duration of ESE (Hours)
Lecture	Practical/ Internship	Tutorial	CE	ESE	Total	
60	-	60	50	50	100	2hrs

Lecture/Tutorials, P/I=Practical/Internship, CE =Continuous Evaluation, ESE = End Semester Evaluation

Course Description

This course provides a comprehensive exploration of linear and angular kinematics and kinetics in sports, focusing on understanding the causes of motion and analyzing movements in various athletic activities. Students will learn about the principles governing linear and angular motion, including forces, torques, momentum, work, power, energy, fluid mechanics, levers, and projectile motion. The course enables students to analyze fundamental movements and sports techniques to enhance understanding and improve performance.

COURSE OBJECTIVES

After the completion of the course, the students will be able to

CO No.	Expected outcome	Learning Domains
CO1	Understanding of the fundamental concepts of linear motions and principles of linear kinetics to analyze forces involved in maintaining equilibrium or changing motion.	U,A,An
CO2	Apply and analyze the factors of mechanical laws involved in human movement	A,An

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CO3	Students will demonstrate proficiency in distinguishing between angular and linear measurements and understanding their applications in sports biomechanics.	E,A
CO4	Enable the students to conduct mechanical analyses of fundamental movements and sports techniques	E,An
CO5	Understand the principles of projectile motion to analyze and optimize sports techniques involving projectiles such as throwing and kicking.	C,E
CO6	To develop proficiency in applying theoretical knowledge of biomechanics to practical scenarios in sports coaching and performance optimization.	C,E,An

***Remember (R), Understand (U), Apply (A), Analyse (An), Evaluate (E), Create (C)**

Mapping of Course Outcomes to PSOs

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1		✓		✓		
CO2		✓		✓		
CO3			✓			
CO4		✓			✓	
CO5			✓		✓	✓
CO6		✓	✓			✓

COURSE CONTENTS

Module 1: Linear Kinematics & Kinematics

Hours of transaction:10

1.1 Describing Objects in Linear Motion

- Motion and its types
- Position, Distance, Displacement,
- Speed velocity and acceleration

1.2 Linear Kinetics

- Forces in Maintaining Equilibrium or Changing Motion
- Definition & classifications of force
- Friction and types

1.3 Explaining the Causes of Linear Motion

- Newton’s First Law of Motion
- Law of Conservation of Momentum
- Newton’s Second Law of Motion: Law of acceleration
- Impulse and Momentum
- Newton’s Third Law of Motion: Law of Action-Reaction

Suggested reading specific to the module

1.1 Peter Merton McGinnis (2013)- *Biomechanics of sport and exercise*
3rd Edition: Human Kinetics, Champaign, IL

1.2 Dr. Praveen Kumar (2021) - *Sports Biomechanics and Kinesiology* –
Friends Publications (India)

1.3 Peter Merton McGinnis (2013) - *Biomechanics of sports and exercise* –
Human Kinetics

1.4 Vladimir M. Zatsiorsky (2002) - *Kinetics of Human Motion* – Vladimir M.
Zatsiorsky
- Human Kinetics

1.5 David Paul Greene, Susan L. Roberts (2015) - *Kinesiology – Movement in*
the context of activity – Elsevier Health Sciences

Module 2 Angular Kinematics and kinetics

Hours of transaction:10

2.1 Describing Objects in Angular Motion

- Angular Position and Displacement
- Angular and Linear Displacement
- Angular Velocity Angular and Linear Velocity
- Angular Acceleration Angular and Linear Acceleration

2.2 Torques and Moments of Force in maintaining equilibrium or changing
angular Motion

- Definition Torques
- Muscular torque
- Forces and Torques in Equilibrium

2.3 Angular Kinetics: Explaining the Causes of Angular Motion

- Angular Inertia & Angular Momentum
- Angular Interpretation of Newton’s First Law of Motion
- Angular Interpretation of Newton’s Second Law of Motion
- Angular Impulse and Angular Momentum
- Angular Interpretation of Newton’s Third Law of Motion

Suggested reading specific to the module

2.1 Peter Merton McGinnis (2013)- *Biomechanics of sport and exercise*
3rd Edition: Human Kinetics, Champaign, IL

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2.2 Christy J. Cael (2022) - *Functional Anatomy* – Jones & Bartlett Learning

2.3 Don Meikle (1997) - *Muscles of the human body*

2.4 J. Gordon Betts, et.al, (2013) - *Anatomy and Physiology* – OpenStax

2.5 David Paul Greene, Susan L. Roberts (2015) - *Kinesiology – Movement in the context of activity* – Elsevier Health Sciences

Module 3

Hours of transaction:15

3.1 Work, Power, and Energy

- The work-energy relationship in sports
- Doing work to increase energy
- Doing work to decrease energy
- Explaining the Causes of Motion Without Newton

3.2 Fluid and Aero Mechanics

- The Effects of Water and Air
- Buoyant Force, Force Due to Immersion
- Dynamic Fluid Force
- Air resistance, Lift, and drag components

3.3 Levers and Mechanical Advantage

- Types of levers and their applications in sports movements
- Analysis of mechanical advantage in sports equipment and techniques
- Practical implications of lever systems for enhancing sports performance

3.4 Projectile motion

- Uniform Acceleration and Projectile Motion
- Vertical horizontal and parabolic projectile
- Projectiles in sports

Suggested reading specific to the module

3.1 Peter Merton McGinnis (2013)- *Biomechanics of sport and exercise*
3rd Edition: Human Kinetics, Champaign, IL

3.2 Peter Guthrie Tait (2007) - *Newton's Laws of Motion* – Harvard University

3.3 Jason Zimba (2009) - *Force and Motion* – John Hopkins University Press

3.4 Susan L. Roberts & Sharon A. Falkenburg (2010) - *Biomechanics* –
Mosby Year Book Hall, S. (2014) *Basic biomechanics*. Mcgraw Hill
Higher Educat. ISBN 9780073522760

3.5 Knudson, D. (2007). *Fundamentals of biomechanics*. New York,
NY: Springer. ISBN 978-0-387-49311-4

Module 4: Kinesiological and Mechanical Analysis Hours of transaction:20

4.1 Fundamental Movements Analysis

- Walking & Running
- Jumping & Landing

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- Throwing & Catching
- Pulling & Pushing
- Climbing & Lifting

4.2 Mechanical analysis of track and field skills

- High jump (Fosbury flop),
- Long Jump (hitch-kick)
- Shot put (Disco Put)
- Hurdling

4.3 Mechanical analysis sports techniques

- Dribbling (football & basketball)
- Kicking the ball
- Throwing and shooting ball
- Cartwheel and somersault

Suggested reading specific to the module

- 4.1** *Nicholas Stergiou (2020) - Biomechanics and Gait analysis – Elsevier Science*
- 4.2** *Andrew Olesnicky, Neville Lawrence (2003) Physics – Projectile Motion – Greg Eather*
- 4.3** *Micheal Aloysius MacConaill, John V. Basmajian (1977) - Muscles and Movements – A Basis for Human Kinesiology – R. E. Krieger Publishing Company*

Module 5 : Teacher Specific Module

Hours of transaction:5

- The respective teacher will prepare the module content, flexibly designing the material according to feasibility, prior modules, and pertinent information.

Core Compulsory Readings

- Peter Merton McGinnis (2013)- Biomechanics of sport and exercise 3rd Edition: Human Kinetics, Champaign, IL.
- Dr. A.K. Uppal and Dr. Jogiswar Goswami (2020) - Kinesiology and Biomechanics – Friends Publications (Indai)
- Dr. Praveen Kumar (2021) - Sports Biomechanics and Kinesiology – Friends Publications (India)
- Donald. Neumann (2010) - Kinesiology of the Musculoskeletal System – mosby/Elsevier
- Hall, S. (2014) Basic biomechanics. Mcgraw Hill Higher Educat. ISBN 9780073522760
- Knudson, D. (2007). Fundamentals of biomechanics. New York, NY: Springer. ISBN 978-0-387-49311-4

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Core Suggested Readings

- Marion Ruth Broar (2008) - An Introduction to Kinesiology – The University of Michigan

TEACHING LEARNING STRATEGIES

The class will be taught by using lectures and demonstration, seminars, classroom discussion, videos, charts and presentations method.

MODE OF TRANSACTION

Lecture//Laboratory Work/ Field Work/ Outreach Activities/ Project Work/ Vocational Training/Viva/ Seminars/ Term Papers/Assignments/ Presentations/ Self-Study etc

ASSESSMENT RUBRICS

Evaluation Type		Marks
End Semester Evaluation		50
Continuous Evaluation		50
a)	Test Paper – 1 (Written/Oral)	10
b)	Test Paper – 2 (Written/Oral)	10
c)	Assignment Seminar Record Viva-Voce Any other relevant mode of evaluation	(Any three - each for 10 marks) 10 X 3 = 30 Marks
Total		100

Sample Questions to test Outcomes.

1. How does Newton's First Law of Motion relate to an athlete's ability to maintain equilibrium while moving in a straight line? Provide examples from sports where this law is observed
2. Differentiate angular velocity and linear velocity.
3. How does Newton's Second Law of Motion apply to angular motion?
4. Analyse the mechanical advantage of different lever systems in racket sports equipment and techniques
5. Apply principles of projectile motion to analyse the flight path of a javelin throw or a discus throw.

SEMESTER VII

KU7DSEPES402: ADVANCED CONCEPTS IN EXERCISE PHYSIOLOGY

Semester	Course Type	Course Level	Course Code	Credits	Total Hours
7	DSC	400	KU7DSEPES402	4	60

Learning Approach (Hours/ Week)			Marks Distribution			Duration of ESE (Hours)
Lecture	Practical/ Internship	Tutorial	CE	ESE	Total	
60	-	60	50	50	100	2 hrs

Lecture/Tutorials, P/I=Practical/Internship, CE =Continuous Evaluation, ESE = End Semester Evaluation

Course Description

This advanced course offers a comprehensive exploration of the physiological principles underlying human performance and health in the context of exercise and physical activity. Students will delve into advanced topics across multiple domains, including cardiovascular and respiratory physiology, neuromuscular adaptations, energy metabolism, environmental physiology, and performance enhancement strategies. Emphasis will be placed on integrating interdisciplinary perspectives, evaluating evidence-based practices, and applying advanced concepts to optimize athletic performance, promote health, and prevent chronic disease

Course Outcomes: At the end of the course, the student will be able to

CO No.	Expected outcome	Learning Domains
CO1	To explore advanced concepts in exercise physiology and their implications for human performance and health.	R
CO2	To analyse the physiological responses and adaptations of the cardiovascular, respiratory, and neuromuscular systems to exercise.	U,A,An
CO3	Discuss the implications of neuromuscular adaptations for athletic performance enhancement and injury prevention.	R,U,A

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CO4	Evaluate the metabolic regulation and energy metabolism during exercise and its impact on performance and metabolic health.	A, An,E
CO5	To synthesize interdisciplinary perspectives and apply evidence-based practices to optimize athletic performance and promote health outcomes	A, An, E,C

***Remember (R), Understand (U), Apply (A), Analyse (An), Evaluate (E), Create (C)**

Mapping of Course Outcomes to PSOs						
	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	✓		✓			
CO2	✓	✓	✓			
CO3			✓		✓	✓
CO4		✓	✓	✓	✓	✓
CO5			✓	✓	✓	✓

COURSE CONTENTS

Module 1: Advanced Cardiovascular and Respiratory Physiology Hours of transaction:10

1.1 Advanced Concepts in Cardiovascular Physiology

- Hemodynamic and vascular function
- Advanced cardiac physiology and adaptations to exercise
- Cardiovascular control mechanisms and regulatory pathways

1.2 Advanced Respiratory Physiology

- Pulmonary gas exchange dynamics
- Regulation of ventilation during exercise
- Ventilatory control mechanisms and adaptations

1.3 Cardiovascular-Respiratory Interactions

- Integrated responses during exercise stress
- Advanced concepts in oxygen transport and utilization
- Exercise-induced changes in pulmonary blood flow distribution

Suggested reading specific to the Module

1.1 Davidson, D.S.& Morgan. (2002) *Human body revealed*. Great Britain, Dorling

1.2 Kindersley Bruce M. Carlson (2014) - *The Human Body – Elsevier/Saunders*

1.3 Guy Orchard & Brian Naton (2015) - Cell structure and function – OUP Oxford

Module 2: Advanced Neuromuscular Adaptations

Hours of transaction:15

2.1 Neuromuscular Plasticity and Adaptations

- Advanced concepts in motor unit recruitment and firing patterns
- Neuromuscular fatigue mechanisms and recovery strategies
- Advanced electromyography techniques

2.2 Motor Learning and Skill Acquisition

- Neural mechanisms underlying motor skill acquisition
- Advanced principles of motor control and coordination
- Training interventions to optimize motor performance

2.3 Neuromuscular Function in Special Populations

- Neuromuscular adaptations in aging, injury, and disease
- Rehabilitation strategies for neuromuscular dysfunction
- Advanced concepts in neuromuscular assessment and diagnostics

Suggested reading specific to the Module

2.1 Mc Ardle, W.D.; Katch, F.I. & Katch, V.L. (2010) *Exercise physiology- Nutrition, Energy, and human performance.7th edition. Philadelphia, Wolters Klnwerand Lippincott Williams & Wilkins.*

2.2 Bruce M. Carlson (2014) - *The Human Body – Elsevier/Saunders*

2.3 Whiting W.C., & Rugg, S. (2006). *Dynatomy: dynamic human anatomy. Champaign, IL, Human Kinetics.*

Module 3: Advanced Topics in Energy Metabolism

Hours of transaction:10

3.1 Substrate Utilization and Metabolic Flexibility

- Advanced concepts in substrate metabolism during exercise
- Metabolic adaptations to different exercise modalities and intensities

3.2 Endocrine Regulation of Energy Metabolism

- Hormonal control of metabolism during exercise
- Advanced concepts in energy substrate mobilization and utilization
- Hormonal responses to exercise and their role in metabolic adaptation

3.3 Metabolic Regulation in Health and Disease

- Metabolic adaptations in metabolic syndrome, diabetes, and obesity
- Therapeutic interventions targeting metabolic dysfunction

Suggested reading specific to the Module

3.1 Manocchia. P. (2007) *Anatomy of Exercise-A trainers inside guide to your workout. NewYork, A&C Black.*

3.2 J. Gordon Betts Et.al. (2013) - *Anatomy and Physiology – OpenStax*

3.3 Bruce M. Carlson (2014) - *The Human Body – Elsevier/Saunders*

3.4 Lindsay Biga et al. (2019)- *Anatomy & Physiology – Oregon State Open Educational Resources*

Module 4: Advanced Performance Enhancement Strategies

Hours of transaction:15

4.1 Ergogenic Aids: Mechanisms and Efficacy

- Advanced pharmacological, nutritional, and physiological ergogenic aids
- Mechanisms of action and evidence-based efficacy
- Ethical considerations and regulatory issues

4.2 Novel Training Modalities

- Advanced concepts in periodization and training program design
- High-intensity interval training (HIIT), plyometrics, and concurrent training
- Advanced resistance training methodologies and adaptations

4.3 Integrative Approaches to Performance Enhancement

- Interdisciplinary perspectives on optimizing athletic performance
- Integrating nutrition, psychology, biomechanics, and physiology
- Advanced techniques for individualized performance optimization

Suggested reading specific to the Module

4.1 V Muruguvalan, *Anatomy and Physiology for Physical Education*

4.2 Brice M Carlson, *The Human Body*

4.3 A K Uppal and Vivek Chaudhary, *Health, Education, Anatomy and Physiology*

4.4 Nick Draper, *Exercise Physiology for Health and Sports Performance*

Module 5 : Teacher Specific Module

Hours of transaction:10

- The respective teacher will prepare the module content, flexibly designing the material according to feasibility, prior modules, and pertinent information.

Core Compulsory Reading

- B. N. Gupta (2008) - *The role of Anatomy and Physiology – Alfa Publications*
- Graham Thompson (2010) *Physical Education – Anatomy and Exercise Physiology – Hodder Education Group*
- Tommy Boone (2017) – *A pressing concern in Exercise Physiology Commitment to Professionalism – Bentham Science Publications*

Core Suggested Reading

- Rod R. Seeley, Trent D. Stephens, Philip Tate. (2007) - *Anatomy and Physiology – McGraw-Hill*
- Garg, K., Mittal, P. S., & Chandrupatla, M. (2016). *Human Anatomy (7th Edn). New Delhi: CBS Publishers.*
- Waugh, A., & Grant, A. (2014). *Anatomy and physiology in health and illness (12th Edn). China: Churchill Livingstone Elsevier.*

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- *Wingerd, B. (2014). The human body: Concepts of anatomy and physiology (3rd Edn). Baltimore: Wolters Kluwer.*
- *Netter, F. H. (2003). Atlas of human anatomy. New Jersey: Icon Learning Systems.*
- *Thibodeau, G. A., & Patton, K. T. (2003). Anatomy and physiology. St. Louis, Missouri: Elsevier.*
- *Waugh, A., & Grant, A. (2010). Anatomy and physiology. Edinburgh: Elsevier.*

TEACHING LEARNING STRATEGIES

- The class will be taught by using lectures and demonstrations, seminars, classroom discussions, videos, charts, and presentation methods.

MODE OF TRANSACTION

- Lecture//Laboratory Work/ Field Work/ Outreach Activities/ Project Work/ Vocational Training/Viva/ Seminars/ Term Papers/Assignments/ Presentations/ Self-Study etc

ASSESSMENT RUBRICS

Evaluation Type		Marks
End Semester Evaluation		50
Continuous Evaluation		50
a)	Test Paper – 1 (Written/Oral)	10
b)	Test Paper – 2 (Written/Oral)	10
c)	Assignment Seminar Record Viva-Voce Any other relevant mode of evaluation	(Any three - each for 10 marks) 10 X 3 = 30 Marks
Total		100

Sample Questions to test Outcomes.

1. Discuss the role of cardiovascular control mechanisms in regulating cardiac output during incremental exercise. How do these mechanisms differ between trained and untrained individuals?
2. What are the main factors contributing to muscle fatigue during exercise, and how do they differ between short bursts of intense activity and prolonged endurance efforts?
3. Discuss the role of proprioception in neuromuscular control and movement coordination. How can proprioceptive training enhance athletic performance and reduce injury risk?

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4. How does high-intensity interval training (HIIT) differ from traditional steady-state cardio? What are the potential benefits and drawbacks of incorporating HIIT into an exercise routine?

SEMESTER VII

KU7DSEPES403: SPORTS NUTRITION AND TRAINING ADAPTATIONS

Semester	Course Type	Course Level	Course Code	Credits	Total Hours
7	DSE	400	KU7DSEPES403	4	60

Learning Approach (Hours/ Week)			Marks Distribution			Duration of ESE (Hours)
Lecture	Practical/ Internship	Tutorial	CE	ESE	Total	
60	-	60	50	50	100	2 hr

Lecture/Tutorials, P/I=Practical/Internship, CE =Continuous Evaluation, ESE = End Semester Evaluation

Course Description

This course is designed to equip students with the knowledge and skills necessary to understand the intricate relationship between nutrition and athletic performance. The course delves into fundamental principles of sports nutrition, explores nutritional strategies for enhancing performance, elucidates training adaptations and periodization concepts, and addresses advanced topics such as nutritional supplements, special populations, and psychological factors influencing nutrition and training.

Course Outcomes: At the end of the course, the student will be able to

CO No.	Expected outcome	Learning Domains
CO1	Understanding of the fundamental concepts of sports nutrition, including the significance of optimizing athletic performance.	R,U
CO2	Analyze specific nutritional needs for endurance, strength, and power athletes and implement carbohydrate loading and protein strategies for performance enhancement additionally, helps in understanding the role of supplements in strength and power sports.	R,U,An
CO3	Demonstrate understanding of the physiological responses to training and various periodization models for different sports and enable the implementation of nutritional strategies for optimizing training adaptations.	A,E
CO4	Critically evaluate the efficacy, safety, and legality of nutritional supplements and develop tailored nutrition and training plans for special populations additionally to equip with psychological strategies to enhance adherence and performance.	A, AN

***Remember (R), Understand (U), Apply (A), Analyse (An), Evaluate (E), Create (C)**

Mapping of Course Outcomes to PSOs

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1		✓				
CO2		✓		✓	✓	✓
CO3			✓			✓
CO4		✓	✓		✓	✓

Module 1: Fundamentals of Sports Nutrition

Hours of transaction:10

1.1 Introduction to Sports Nutrition

- Definition and importance of sports nutrition
- Macronutrients and micronutrients for athletes
- Dietary guidelines and recommendations for optimizing athletic performance

1.2 Energy Metabolism and Nutrient Timing

- Energy systems used during exercise
- Timing of nutrient intake for pre-, during, and post-exercise periods
- Role of carbohydrates, proteins, and fats in fueling exercise and recovery

1.3 Hydration and Electrolyte Balance

- Importance of hydration in sports performance
- Electrolyte needs during exercise and recovery
- Strategies for maintaining proper fluid and electrolyte balance

Suggested readings specific to the module.

1.1 Fink, Heather Hedrick (2006). *Practical Applications in Sports Nutrition*. Jones and Bartlett Publishers.

1.2 Maughan, R. J. (Ed.). (2008). *Nutrition in sport (Vol. 7)*. John Wiley & Sons.

1.3 Fink, H. H., & Mikesky, A. E. (2017). *Practical applications in sports nutrition*. Jones & Bartlett Learning.

1.4 Eberle, S. G. (2013). *Endurance Sports Nutrition, 3E*. Human Kinetics.

1.5 Nitika Thareja (2021) - *The Balanced Diet: Healthy*

1.6 Alice Callahan, Heather Leonard, Kimberly Powell (2020) - *Nutrition:*

Science and Everyday Application – Open Oregon Educational Resources

1.7 Flavia Meyer, Zbigniew Szygula, Boguslaw Wilk. (2016) - *Fluid Balance, Hydration and Athletic Performance – CRC Press*

Module 2: Nutritional Strategies for Performance Enhancement

Hours of transaction:10

2.1 Nutritional Needs for Endurance Athletes

- Specific dietary considerations for endurance training and competition
- Carbohydrate loading and fueling strategies
- Optimizing glycogen stores for prolonged exercise

2.2 Nutrition for Strength and Power Athletes

- Protein requirements for muscle repair and growth
- Importance of nutrient timing for strength training adaptations
- Dietary supplements for strength and power athletes: efficacy and safety considerations

2.3 Weight Management and Body Composition

- Nutrition strategies for weight loss, maintenance, and gain
- Body composition assessment methods
- Eating disorders and disordered eating in athletes: prevention and intervention strategies.

Suggested readings specific to the module.

2.1 Robert E.C. Wildman, Barry S. Miller, (2004), "Sports and Fitness Nutrition", Thomson.

2.2 Bean, Anitha (2006), 5th ed, Sports Nutrition

2.3 Burke, Louise (2007), Practical Sports Nutrition, Human Kinetics

2.4 Dan Benardot (2011) - Advanced Sports Nutrition – Human Kinetics, Incorporated

2.5 Alice Callahan, Heather Leonard, Tamberly Powell (2020) - Nutrition: Science and Everyday Application – Open Oregon Educational Resources

2.6 1.4 Flavia Meyer, Zbigniew Szygula, Boguslaw Wilk. (2016) - Fluid Balance, Hydration and Athletic Performance – CRC Press

Module 3: Nutritional Strategies for training adaptations and periodization

Hours of transaction:10

3.1 Principles of Training Adaptation

- Physiological responses to exercise and training and concepts of overload, specificity, and progression principles
- Overview of periodization concepts and models
- Macrocycle, mesocycle, and micro cycle planning
- Application of periodization in different sports and disciplines

3.2 Nutritional Adaptations Across Periodization Cycles

- Nutritional demands of athletes during different phases of periodization, including preparation, competition, and recovery periods.

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- Macronutrient and micronutrient needs across different training intensities and volumes within periodization cycles.
- Strategies to adjust nutrient timing, composition, and supplementation to align with the goals of each phase of periodization.

3.3 Recovery Strategies and Regeneration

- Importance of recovery in optimizing training adaptations
- Active and passive recovery techniques: efficacy and implementation
- Integration of nutritional support with other recovery modalities to optimize training adaptations and minimize the risk of overtraining. (sleep hygiene, active rest, and stress management techniques)

Suggested readings specific to the module

3.1 Heather Hedrick Fink, Alan E. Mikesky (2020) - *Practical Application in Sports Nutrition*- Jones & Bartlett Learning, LLC

3.2 Anita Bean (2013) - *The Complete Guide to Sports Nutrition* – Bloomsbury Publishing

3.3 Bill Campbell (2013) - *Sports Nutrition: Enhancing Athletic Performance* Taylor & Francis

3.4 Benardot, Don (2000), *Advanced Sports Nutrition, HumanKinetics.*

3.5 Bompa, T. O., & Haff, G. G. (2018). *Periodization: Theory and methodology of training (6th ed.)*. Human Kinetics.

3.6 Baechle, T. R., & Earle, R. W. (2008). *Essentials of strength training and conditioning (3rd ed.)*. Human Kinetics

Module 4: Advanced Concepts in Sports Nutrition and Training

Hours of transaction:10

4.1 Nutritional Supplements in Sports Performance

- Efficacy, safety, and legality of dietary supplements
- Common supplements used in sports and exercise
- Evidence-based recommendations for supplement use

4.2 Special Populations in Sports Nutrition and Training

- Nutrition and training considerations for youth athletes, masters' athletes, and special populations (e.g., pregnant athletes, vegetarian athletes)
- Managing medical conditions through nutrition and exercise

4.3 Psychological Factors in Nutrition and Training

- The role of psychology in adherence to nutrition and training protocols
- Mental strategies for enhancing performance and managing stress
- Behavioral interventions for promoting healthy habits in athletes

Suggested readings specific to the module.

Syllabus – Five-Year Integrated Master of Physical Education and Sports.

- 4.1** Eberle, S. G. (2013). *Endurance Sports Nutrition, 3E. Human Kinetics.*
- 4.2** Ryan, M. (2012). *Sports nutrition for endurance athletes. Velo Press.*
- 4.3** Campbell, B. (Ed.). (2013). *Sports nutrition: enhancing athletic performance. CRC 22 Press.*
- 4.4** Reaburn, P. R. (Ed.). (2014). *Nutrition and Performance in Masters Athletes. CRC Press.*
- 4.5** Slater, G., & Phillips, S. M. (2011). *Nutrition guidelines for strength sports: sprinting, weightlifting, throwing events, and bodybuilding. Journal of sports sciences, 29(sup1), S67-S77.*
- 4.6** Natalie DigateMuth,(2015), *Sports Nutrition for Health Professionals, F. A. Davis Company, 1915 Arch Street, Philadelphia,USA.*
- 4.7** Heather Hedrick fink, Lisa A. Burgoon, Alan E. Mikesy, (2006), *Practical Application in sports Nutrition”, Jones and Barlett.*
- 4.8** Burke, Louise (2007), *Practical Sports Nutrition, Human Kinetics.*
- 4.9** Gleeson, Jeukendrup (2004), *Sports Nutrition: an introduction to energy production and performance, Human Kinetics.*

Module 5 : Teacher Specific Module

Hours of transaction:10

- The respective teacher will prepare the module content, flexibly designing the material according to feasibility, prior modules, and pertinent information.

Core Compulsory Readings

- Fink, Heather Hedrick (2006). *Practical Applications in Sports Nutrition.* Jones and Bartlett Publishers.
- Maughan, R. J. (Ed.). (2008). *Nutrition in sport (Vol. 7).* John Wiley & Sons.
- Fink, H. H., & Mikesky, A. E. (2017). *Practical applications in sports nutrition.* Jones & Bartlett Learning.
- Eberle, S. G. (2013). *Endurance Sports Nutrition, 3E. Human Kinetics.*
- Ryan, M. (2012). *Sports nutrition for endurance athletes. Velo Press.*
- Campbell, B. (Ed.). (2013). *Sports nutrition: enhancing athletic performance. CRC 22 Press.*
- Reaburn, P. R. (Ed.). (2014). *Nutrition and Performance in Masters Athletes. CRC Press.*
- Slater, G., & Phillips, S. M. (2011). *Nutrition guidelines for strength sports: sprinting, weightlifting, throwing events, and bodybuilding. Journal of sports sciences, 29(sup1), S67-S77.*
- Christoph Zinner and Billy Sperlich. (2016). *Marathon Running: Physiology, Psychology, Nutrition and Training Aspects*
- Louise Burke (2007) - *Practical Sports Nutrition – Human Kinetics*

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- Nancy Clark (2014) - Nancy Clark's Sports Nutrition Guidebook, –Human Kinetics
- Heather Fink, Alan Mikesky, Lisa Burgoon (2011) - Practical Application in Sports Nutrition – Jones & Bartlett Learning
- Melinda Manore, nanna L. Meyer, Janice Thompson (2009) Sports Nutrition for Health and Performance – Human Kinetics

Core Suggested Readings

- Burke, Louise, and Vicki Deakin. (2015). Clinical sports nutrition. McGraw- Hill.
- Broad, E. (Ed.). (2014). Sports Nutrition for Paralympic Athletes. CRC Press.
- Maughan, R. J., & Shirreffs, S. M. (Eds.). (2013). Food, Nutrition and Sports Performance III. Routledge.
- Campbell, B. (Ed.). (2013). Sports nutrition: enhancing athletic performance. CRC Press.
- Larson-Meyer, D. E. (2007). Vegetarian sports nutrition. Human Kinetics.
- Marie Dunford. (2017) Nutrition for Sport and Exercise.
- LeMura, L. M., & Von Duvillard, S. P. (Eds.). (2004). Clinical exercise physiology: application and physiological principles. Lippincott Williams & Wilkins.
- Cheung, S. (2010). Advanced environmental exercise physiology. Human Kinetics.
- Emmanuel A. Andreadis - Hypertension and Cardiovascular diseases – Springer International Publishing
- Deakin, Burke (2006), 3rd, Clinical Sports Nutrition, McGraw- Hill Austria.
- Bourns, Fred (ed), Essentials of Sports Nutrition, 2nd Ed (2002), John and Wiley.
- Benardot, Don (2000), Advanced Sports Nutrition, Human Kinetics.
- Burke, Louise (2007), Practical Sports Nutrition, Human Kinetics.
- Gleeson, Jeukendrup (2004), Sports Nutrition: an introduction to energy production and performance, Human Kinetics.

TEACHING LEARNING STRATEGIES

The class will be taught by using lectures and demonstrations, seminars, classroom discussions, videos, charts, and presentation methods.

MODE OF TRANSACTION

Lecture//Laboratory Work/ Field Work/ Outreach Activities/ Project Work/ Vocational Training/Viva/ Seminars/ Term Papers/Assignments/ Presentations/ Self-Study etc

ASSESSMENT RUBRICS

Evaluation Type		Marks
End Semester Evaluation		50
Continuous Evaluation		50
a)	Test Paper – 1 (Written/Oral)	10
b)	Test Paper – 2 (Written/Oral)	10
c)	Assignment Seminar Record Viva-Voce Any other relevant mode of evaluation	(Any three - each for 10 marks) 10 X 3 = 30 Marks
Total		100

Sample Questions to test Outcomes.

1. How the Timing of nutrient intake for pre-, during, and post-exercise periods affect performance of an athlete.
2. Discuss the Nutritional demands of athletes during different phases of periodization, including preparation, competition, and recovery periods
3. Explain the strategies for integrating nutritional support with recovery modalities to optimize training adaptations.
4. Explain various behavioral interventions for building the healthy eating habits

SEMESTER VII

KU7DSSPES404: SCIENCE OF COACHING

Semester	Course Type	Course Level	Course Code	Credits	Total Hours
7	DSE	400	KU7DSSPES404	4	60

Learning Approach (Hours/ Week)			Marks Distribution			Duration of ESE (Hours)
Lecture	Practical/ Internship	Tutorial	CE	ESE	Total	
60	-	60	50	50	100	2 hrs

Lecture/Tutorials, P/I=Practical/Internship, CE =Continuous Evaluation, ESE = End Semester Evaluation

Course Description

This syllabus provides a comprehensive overview of coaching science at the capstone level, covering essential topics such as coaching theory, biomechanics, physiology, leadership, and ethics of sports coaching.

Course Outcomes: At the end of the course, the student will be able to

CO No.	Expected outcome	Learning Domains
CO1	Demonstrate a comprehensive understanding of the foundational principles and theories of coaching science	R,U,A
CO2	Proficiency in applying biomechanical concepts to analyze human movement, identify areas for improvement, and implement strategies to optimize athletic performance	U,A,An
CO3	Develop a comprehensive understanding of the physiological principles underpinning athletic performance and conditioning in the context of coaching.	,U,A
CO4	Develop a comprehensive understanding of the critical role of leadership and ethical considerations in coaching.	A, AN

***Remember (R), Understand (U), Apply (A), Analyze (An), Evaluate (E), Create (C)**

Mapping of Course Outcomes to PSOs						
	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	✓	✓	✓		✓	✓
CO2	✓		✓	✓	✓	✓
CO3	✓	✓		✓	✓	✓
CO4	✓	✓	✓		✓	✓

COURSE CONTENTS

Module 1: Foundations of Coaching Science

Hours of transaction:15

1.1 Introduction to Coaching Science

- Definition and scope of coaching science
- Historical perspectives and evolution of coaching
- The role of coaching in athlete development and performance enhancement

1.2 Coaching Theory and Models

- Overview of coaching theories and models, Coach-athlete relationship
- Application of coaching theories in different sports contexts
- Examination of influential coaching models and their effectiveness

1.3 Psychology in Coaching

- Understanding athlete motivation and behavior
- Psychological factors affecting coaching effectiveness
- Techniques for enhancing athlete mindset and mental resilience

Suggested readings specific to the Module

1.1 Lyle, J. (2002). *Sports coaching concepts: A framework for coaches' behavior.*

Routledge.

1.2 Gilbert, W., & Trudel, P. (2004). *Learning to coach through experience: Reflection in model youth sport coaches. Physical Education and Sport Pedagogy, 9(1), 27-47.*

1.3 Horn, T. S., & Horn, J. L. (2007). *Advances in sport psychology. Human Kinetics.*

1.4 Dick FW (1999). *Sport training Principles. A and C Black. London.*

1.5 Newton H (2006). *Explosive lifting for sports. Human Kinetics. US.*

Module 2: Biomechanics and Movement Analysis in Coaching

Hours of transaction:15

2.1 Biomechanical Principles in Coaching

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- Fundamentals of biomechanics and their application in coaching
- Analysis of human movement in sports
- Biomechanical considerations for optimizing athletic performance and injury prevention

2.2 Technology in Movement Analysis

- Utilization of technology in movement analysis
- Video analysis techniques for coaching feedback and performance evaluation
- Wearable technology and its impact on athlete monitoring and assessment

2.3 Skill Acquisition and Motor Learning

- Theories of skill acquisition and motor learning
- Coaching strategies to facilitate skill acquisition and motor skill development
- Feedback techniques to enhance skill acquisition and performance

Suggested readings specific to the Module

- 2.1** Bartlett, R., Wheat, J., & Robins, M. (2007). *Is movement variability important for sports biomechanisms, Sports Biomechanics, 6(2), 224-243.*
- 2.2** Glazier, P. S. (2017). *Movement skill assessment. Routledge.*
- 2.3** Magill, R. A., & Anderson, D. I. (2017). *Motor learning and control: Concepts and applications. McGraw-Hill Education.*
- 2.4** Singh Hardayal (1991). *Science of Sport Training. D.V.S Pub. Delhi.*
- 2.5** Haff, G., & Triplett, N. *Essentials of strength training and conditioning. Champaign, IL.: Human Kinetics.*

Module 3: Physiology and Conditioning in Coaching

Hours of transaction:10

3.1 Exercise Physiology Fundamentals

- Basic principles of exercise physiology relevant to coaching
- Energy systems and their contribution to athletic performance
- Physiological responses to training and exercise

3.2 Strength and Conditioning Principles

- Principles of strength and conditioning programming
- Periodization and planning for athletic development
- Strength training techniques and modalities

3.3 Nutrition and Recovery Strategies

- Nutritional considerations for optimizing performance and recovery
- Hydration strategies for athletes
- Recovery techniques to enhance post-exercise recovery and reduce injury risk

Suggested readings specific to the Module

- 3.1** Haff, G., & Triplett, N. *Essentials of strength training and conditioning. Champaign, IL.: Human Kinetics*

Syllabus – Five-Year Integrated Master of Physical Education and Sports.

3.2 Bompa. T.O. (1994). *Theory and Methods of Training-A Key to Athletic Performance (3rd Ed.)*. Kandwall Hunt Publication Co.

3.3 Bompa, T., & Haff, G. (2009). *Periodization*. Champaign, IL.: Human Kinetics. ISBN-13: 9780736074834

3.4 Baechle T R & Earle R W (2000). *Essentials of strength training and conditioning*. Human Kinetics. The USA.

3.5 Zatsiorsky, V., & Kraemer, W. (2006). *Science and practice of strength training*. Champaign, IL: Human Kinetics.

Module 4: Leadership and Ethical Issues in Coaching

Hours of transaction:10

4.1 Leadership in Coaching

- Leadership styles and their impact on coaching effectiveness
- Strategies for building positive coach-athlete relationships
- Effective communication and motivational techniques in coaching

4.2 Ethical Considerations in Coaching

- Ethical principles and dilemmas in coaching practice
- Safeguarding athletes' welfare and well-being
- Professional conduct and ethical decision-making in coaching

4.3 Coach Development and Continuous Learning

- Importance of ongoing coach development and education
- Professional organizations and resources for coaches
- Strategies for self-reflection and continuous improvement as a coach

Suggested readings specific to the Module

4.1 Lyle, J. (2002). *Sports coaching concepts: A framework for coaches' behavior*. Routledge.

4.2 Gilbert, W., & Trudel, P. (2004). *Learning to coach through experience: Reflection in model youth sport coaches*. *Physical Education and Sport Pedagogy*, 9(1), 27-47.

4.3 Horn, T. S., & Horn, J. L. (2007). *Advances in sport psychology*. Human Kinetics.

4.4 Jowett, S., & Cockerill, I. M. (2003). *Olympic medallists' perspective of the athlete-coach relationship*. *Psychology of Sport and Exercise*, 4(4), 313-331.

4.5 Lyle, J. (2018). *Sports coaching handbook*. Routledge.

4.6 Wylleman, P., & Lavallee, D. (2004). *A developmental perspective on transitions faced by athletes*. In A. M. L. McNeill & W. J. Courtenay

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(Eds.), Developing sport expertise: Researchers and coaches put theory into practice (pp. 259-276). Routledge.

Module 5: Teacher Specific Module

Hours of transaction:10

- The respective teacher will prepare the module content, flexibly designing the material according to feasibility, prior modules, and pertinent information.

Core Compulsory readings

- BeotraAlka, (2000), Drug Education Handbook on Drug Abuse in Sports. Delhi: Sports Authority of India.
- Bunn, J.N. (1998) Scientific Principles of Coaching, New Jersey Engle Wood Cliffs, Prentice Hall Inc.
- Baechle T R & Earle R W (2000). Essentials of strength training and conditioning. Human Kinetics. USA.
- Bompa. T.O. (1994). Theory and Methods of Training-A Key to Athletic Performance (3rd Ed.). Kandwall Hunt Publication Co.
- Bompa, T., & Haff, G. (2009). Periodization. Champaign, IL.: Human Kinetics.ISBN-13: 9780736074834
- Bompa. T.O. and G. Gregory Hett. (2009) Periodization: Theory and Methodology of Training.
- Bompa, T., & Carrera, M. (2005). Periodization training for sports. Champaign, Ill.: Human Kinetics.
- Cart, E. Klafs& Daniel, D. Arnhem (1999) Modern Principles of Athletic Training St. Louis C. V. Mosphy Company
- Dick FW (1999). Sport training Principles. A and C Black. London

Core suggested readings

- Wuest, D., & Fiset, J. (2014) Foundations of physical education, exercise science, and sport. McGraw-Hill Higher Education.
- Daniel, D. Arnhem (1991) Principles of Athletic Training, St. Luis, Mosby.
- Haff, G., & Triplett, N. Essentials of strength training and conditioning. Champaign, IL.: Human Kinetics.
- Singh Hardayal (1991). Science of Sport Training. D.V.S Pub. Delhi.
- Newton H (2006). Explosive lifting for sports. Human Kinetics. US.
- Zatsiorsky, V., & Kraemer, W. (2006). Science and practice of strength training. Champaign, IL: Human Kinetics.

LIST OF PRACTICUMS

- To prepare a training plan (Session plan, days plan, micro cycle plan, mesocycle plan, and macrocycle plan in different periods of training for

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various sports events)

- Evaluation of training (Testing of motor components and performance)

TEACHING LEARNING STRATEGIES

The subject will be taught by using lectures, demonstrations, seminars, classroom discussions, charts, and presentation methods.

MODE OF TRANSACTION

Lecture//Laboratory Work/Field Work/ Outreach Activities/Project Work/ Vocational Training/Viva/ Seminars/ Term Papers/Assignments/ Presentations/ Self-Study etc.

ASSESSMENT RUBRICS

Evaluation Type		Marks
End Semester Evaluation		50
Continuous Evaluation		50
a)	Test Paper – 1 (Written/Oral)	10
b)	Test Paper – 2 (Written/Oral)	10
c)	Assignment Seminar Record Viva-Voce Any other relevant mode of evaluation	(Any three - each for 10 marks) 10 X 3 = 30 Marks
Total		100

Sample Questions to test Outcomes.

- Discuss the role of coaching in overall athlete development and performance enhancement
- Explain the psychological factors affecting coaching effectiveness
- Discuss about the ethical principles and dilemmas found in coaching practice
- Explain various coaching strategies to facilitate skill acquisition and motor skill development

SEMESTER VIII

KU8DSCPES405: DISSERTATION

(Honours with research)

COURSE CODE	KU8DSCPES405
CREDIT	12
For honours with research, the details of undertaking the project will be as per the guidelines as suggested by the university for the FYIMP.	

SEMESTER VIII

KU7(8)DSEPES401: BIOMECHANICS IN SPORTS AND EXERCISE

Semester	Course Type	Course Level	Course Code	Credits	Total Hours
8	DSC	400	KU7(8)DSEPES405	4	60

Learning Approach (Hours/ Week)			Marks Distribution			Duration of ESE (Hours)
Lecture	Practical/ Internship	Tutorial	CE	ESE	Total	
60	-	60	50	50	100	2hrs

Lecture/Tutorials, P/I=Practical/Internship, CE =Continuous Evaluation, ESE = End Semester Evaluation

*** Students does who have not opted honours with research can take DSE courses from Semester 7**

Course Description

This course provides a comprehensive exploration of linear and angular kinematics and kinetics in sports, focusing on understanding the causes of motion and analyzing movements in various athletic activities. Students will learn about the principles governing linear and angular motion, including forces, torques, momentum, work, power, energy, fluid mechanics, levers, and projectile motion. The course enables students to analyze fundamental movements and sports techniques to enhance understanding and improve performance.

COURSE OBJECTIVES

After the completion of the course, the students will be able to

CO No.	Expected outcome	Learning Domains
CO1	Understanding of the fundamental concepts of linear motions and principles of linear kinetics to analyze forces involved in maintaining equilibrium or changing motion.	U,A,An
CO2	Apply and analyze the factors of mechanical laws involved in human movement	A,An

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CO3	Students will demonstrate proficiency in distinguishing between angular and linear measurements and understanding their applications in sports biomechanics.	E,A
CO4	Enable the students to conduct mechanical analyses of fundamental movements and sports techniques	E,An
CO5	Understand the principles of projectile motion to analyze and optimize sports techniques involving projectiles such as throwing and kicking.	C,E
CO6	To develop proficiency in applying theoretical knowledge of biomechanics to practical scenarios in sports coaching and performance optimization.	C,E,An

***Remember (R), Understand (U), Apply (A), Analyse (An), Evaluate (E), Create (C)**

Mapping of Course Outcomes to PSOs

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1		✓		✓		
CO2				✓		
CO3			✓			
CO4		✓			✓	
CO5			✓		✓	✓
CO6		✓	✓			✓

COURSE CONTENTS

Module 1: Linear Kinematics & Kinematics

Hours of transaction:10

1.1 Describing Objects in Linear Motion

- Motion and its types
- Position, Distance, Displacement,
- Speed velocity and acceleration

1.2 Linear Kinetics

- **Forces** in Maintaining Equilibrium or Changing Motion
- Definition & classifications of force
- Friction and types

1.3 Explaining the Causes of Linear Motion

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- Newton's First Law of Motion
- Law of Conservation of Momentum
- Newton's Second Law of Motion: Law of acceleration
- Impulse and Momentum
- Newton's Third Law of Motion: Law of Action-Reaction

Suggested reading specific to the module

1.1 Peter Merton McGinnis (2013)- *Biomechanics of sport and exercise*
3rd Edition: Human Kinetics, Champaign, IL

1.2 Dr. Praveen Kumar (2021) - *Sports Biomechanics and Kinesiology –*
Friends Publications (India)

1.3 1.2 Peter Merton McGinnis (2013) - *Biomechanics of sports and exercise*
–*Human Kinetics*

1.4 1.3 Vladimir M. Zatsiorsky (2002) - *Kinetics of Human Motion – Vladimir*
M. Zatsiorsky
- *Human Kinetics*

1.5 David Paul Greene, Susan L. Roberts (2015) - *Kinesiology – Movement in*
the context of activity – Elsevier Health Sciences

Module 2 Angular Kinematics and kinetics

Hours of transaction:10

2.1 Describing Objects in Angular Motion

- Angular Position and Displacement
- Angular and Linear Displacement
- Angular Velocity Angular and Linear Velocity
- Angular Acceleration Angular and Linear Acceleration

2.2 Torques and Moments of Force in maintaining equilibrium or changing angular Motion

- Definition Torques
- Muscular torque
- Forces and Torques in Equilibrium

2.3 Angular Kinetics: Explaining the Causes of Angular Motion

- Angular Inertia & Angular Momentum
- Angular Interpretation of Newton's First Law of Motion
- Angular Interpretation of Newton's Second Law of Motion
- Angular Impulse and Angular Momentum
- Angular Interpretation of Newton's Third Law of Motion

Suggested reading specific to the module

2.1 Peter Merton McGinnis (2013)- *Biomechanics of sport and exercise*
3rd Edition: Human Kinetics, Champaign, IL

2.2 Christy J. Cael (2022) - *Functional Anatomy – Jones & Bartlett Learning*

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2.3 Don Meikle (1997) - *Muscles of the human body*

2.4 J. Gordon Betts, et.al, (2013) - *Anatomy and Physiology – OpenStax*

2.5 David Paul Greene, Susan L. Roberts (2015) - *Kinesiology – Movement in the context of activity – Elsevier Health Sciences*

Module 3

Hours of transaction:15

3.1 Work, Power, and Energy

- The work-energy relationship in sports
- Doing work to increase energy
- Doing work to decrease energy
- Explaining the Causes of Motion Without Newton

3.2 Fluid and Aero Mechanics

- The Effects of Water and Air
- Buoyant Force, Force Due to Immersion
- Dynamic Fluid Force
- Air resistance, Lift, and drag components

3.3 Levers and Mechanical Advantage

- Types of levers and their applications in sports movements
- Analysis of mechanical advantage in sports equipment and techniques
- Practical implications of lever systems for enhancing sports performance

3.4 Projectile motion

- Uniform Acceleration and Projectile Motion
- Vertical horizontal and parabolic projectile
- Projectiles in sports

Suggested reading specific to the module

3.1 Peter Merton McGinnis (2013)- *Biomechanics of sport and exercise 3rd Edition: Human Kinetics, Champaign, IL*

3.2 Peter Guthrie Tait (2007) - *Newton's Laws of Motion – Harvard University*

3.3 Jason Zimba (2009) - *Force and Motion – John Hopkins University Press*

3.4 Susan L. Roberts & Sharon A. Falkenburg (2010) - *Biomechanics – Mosby*

Year Book Hall, S. (2014) Basic biomechanics. Mcgraw Hill Higher Educat. ISBN 9780073522760

3.5 Knudson, D. (2007). *Fundamentals of biomechanics. New York, NY: Springer. ISBN 978-0-387-49311-4*

Module 4: Kinesiological and Mechanical Analysis

Hours of transaction:20

4.1 Fundamental Movements Analysis

- Walking & Running
- Jumping & Landing

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- Throwing & Catching
- Pulling & Pushing
- Climbing & Lifting

4.2 Mechanical analysis of track and field skills

- High jump (Fosbury flop),
- Long Jump (hitch-kick)
- Shot put (Disco Put)
- Hurdling

4.3 Mechanical analysis sports techniques

- Dribbling (football & basketball)
- Kicking the ball
- Throwing and shooting ball
- Cartwheel and somersault

Suggested reading specific to the module

4.1 *Nicholas Stergiou (2020) - Biomechanics and Gait analysis – Elsevier Science*

4.2 *Andrew Olesnicky, Neville Lawrence (2003) Physics – Projectile Motion – Greg Eather*

4.3 *Micheal Aloysius MacConaill, John V. Basmajian (1977) - Muscles and Movements – A Basis for Human Kinesiology – R. E. Krieger Publishing Company*

Module 5 : Teacher Specific Module

Hours of transaction:5

- The respective teacher will prepare the module content, flexibly designing the material according to feasibility, prior modules, and pertinent information.

Core Compulsory Readings

- Peter Merton McGinnis (2013)- Biomechanics of sport and exercise 3rd Edition: Human Kinetics, Champaign, IL.
- Dr. A.K. Uppal and Dr. Jogiswar Goswami (2020) - Kinesiology and Biomechanics – Friends Publications (Indai)
- Dr. Praveen Kumar (2021) - Sports Biomechanics and Kinesiology – Friends Publications (India)
- Donald. Neumann (2010) - Kinesiology of the Musculoskeletal System – mosby/Elsevier
- Hall, S. (2014) Basic biomechanics. Mcgraw Hill Higher Educat. ISBN9780073522760
- Knudson, D. (2007). Fundamentals of biomechanics. New York, NY: Springer. ISBN 978-0-387-49311-4

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Core Suggested Readings

- Marion Ruth Broar (2008) - An Introduction to Kinesiology – The University of Michigan

TEACHING LEARNING STRATEGIES

The class will be taught by using lectures and demonstration, seminars, classroom discussion, videos, charts and presentations method.

MODE OF TRANSACTION

Lecture//Laboratory Work/ Field Work/ Outreach Activities/ Project Work/ Vocational Training/Viva/ Seminars/ Term Papers/Assignments/ Presentations/ Self-Study etc

ASSESSMENT RUBRICS

Evaluation Type		Marks
End Semester Evaluation		50
Continuous Evaluation		50
a)	Test Paper – 1(Written/Oral)	10
b)	Test Paper – 2 Written/Oral)	10
c)	Assignment Seminar Record Viva-Voce Any other relevant mode of evaluation	(Any three - each for 10 marks) 10 X 3 = 30 Marks
Total		100

Sample Questions to test Outcomes.

1. How does Newton's First Law of Motion relate to an athlete's ability to maintain equilibrium while moving in a straight line? Provide examples from sports where this law is observed
2. Differentiate angular velocity and linear velocity.
3. How does Newton's Second Law of Motion apply to angular motion?
4. Analyse the mechanical advantage of different lever systems in racket sport equipment and techniques
5. Apply principles of projectile motion to analyse the flight path of a javelin thrower a discus throw.

SEMESTER VIII

KU7(8)DSEPES402*: ADVANCED CONCEPTS IN EXERCISE PHYSIOLOGY

Semester	Course Type	Course Level	Course Code	Credits	Total Hours
8	DSC	400	KU7(8)DSEPES406	4	60

Learning Approach (Hours/ Week)			Marks Distribution			Duration of ESE (Hours)
Lecture	Practical/ Internship	Tutorial	CE	ESE	Total	
60	-	60	50	50	100	2 hrs

Lecture/Tutorials, P/I=Practical/Internship, CE =Continuous Evaluation, ESE = End Semester Evaluation

*** Students does who have not opted honours with research can take DSE courses from Semester 7**

Course Description

This advanced course offers a comprehensive exploration of the physiological principles underlying human performance and health in the context of exercise and physical activity. Students will delve into advanced topics across multiple domains, including cardiovascular and respiratory physiology, neuromuscular adaptations, energy metabolism, environmental physiology, and performance enhancement strategies. Emphasis will be placed on integrating interdisciplinary perspectives, evaluating evidence-based practices, and applying advanced concepts to optimize athletic performance, promote health, and prevent chronic disease

Course Outcomes: At the end of the course, the student will be able to

CO No.	Expected outcome	Learning Domains
CO1	To explore advanced concepts in exercise physiology and their implications for human performance and health.	R
CO2	To analyse the physiological responses and adaptations of the cardiovascular, respiratory, and neuromuscular systems to exercise.	U,A,An
CO3	Discuss the implications of neuromuscular adaptations for athletic performance enhancement and injury prevention.	R,U,A

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CO4	Evaluate the metabolic regulation and energy metabolism during exercise and its impact on performance and metabolic health.	A, An,E
CO5	To synthesize interdisciplinary perspectives and apply evidence-based practices to optimize athletic performance and promote health outcomes	A, An, E,C

***Remember (R), Understand (U), Apply (A), Analyse (An), Evaluate (E), Create(C)**

Mapping of Course Outcomes to PSOs						
	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	✓		✓			
CO2	✓	✓	✓			
CO3			✓		✓	✓
CO4		✓	✓	✓	✓	✓
CO5			✓	✓	✓	✓

COURSE CONTENTS

Module 1: Advanced Cardiovascular and Respiratory Physiology

Hours of transaction:10

1.1 Advanced Concepts in Cardiovascular Physiology

- Hemodynamic and vascular function
- Advanced cardiac physiology and adaptations to exercise
- Cardiovascular control mechanisms and regulatory pathways

1.2 Advanced Respiratory Physiology

- Pulmonary gas exchange dynamics
- Regulation of ventilation during exercise
- Ventilatory control mechanisms and adaptations

1.3 Cardiovascular-Respiratory Interactions

- Integrated responses during exercise stress
- Advanced concepts in oxygen transport and utilization
- Exercise-induced changes in pulmonary blood flow distribution

Suggested reading specific to the Module

- 1.1 Davidson, D.S.& Morgan. (2002) *Human body revealed*. Great Britain, Dorling
 1.2 Kindersley Bruce M. Carlson (2014) - *The Human Body – Elsevier/Saunders*

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1.3 Guy Orchard & Brian Nation (2015) - Cell structure and function – OUP Oxford

Module 2: Advanced Neuromuscular Adaptations **Hours of transaction:15**

2.1 Neuromuscular Plasticity and Adaptations

- Advanced concepts in motor unit recruitment and firing patterns
- Neuromuscular fatigue mechanisms and recovery strategies
- Advanced electromyography techniques

2.2 Motor Learning and Skill Acquisition

- Neural mechanisms underlying motor skill acquisition
- Advanced principles of motor control and coordination
- Training interventions to optimize motor performance

2.3 Neuromuscular Function in Special Populations

- Neuromuscular adaptations in aging, injury, and disease
- Rehabilitation strategies for neuromuscular dysfunction
- Advanced concepts in neuromuscular assessment and diagnostics

Suggested reading specific to the Module

2.1 Mc Ardle, W.D.; Katch, F.I. & Katch, V.L. (2010) *Exercise physiology- Nutrition, Energy, and human performance. 7th edition. Philadelphia, Wolters Kluwer and Lippincott Williams & Wilkins.*

2.2 Bruce M. Carlson (2014) - *The Human Body – Elsevier/Saunders*

2.3 Whiting W.C., & Rugg, S. (2006). *Dynatomy: dynamic human anatomy. Champaign, IL, Human Kinetics.*

Module 3: Advanced Topics in Energy Metabolism **Hours of transaction:10**

3.1 Substrate Utilization and Metabolic Flexibility

- Advanced concepts in substrate metabolism during exercise
- Metabolic adaptations to different exercise modalities and intensities

3.2 Endocrine Regulation of Energy Metabolism

- Hormonal control of metabolism during exercise
- Advanced concepts in energy substrate mobilization and utilization
- Hormonal responses to exercise and their role in metabolic adaptation

3.3 Metabolic Regulation in Health and Disease

- Metabolic adaptations in metabolic syndrome, diabetes, and obesity
- Therapeutic interventions targeting metabolic dysfunction

Suggested reading specific to the Module

3.1 Manocchia. P. (2007) *Anatomy of Exercise-A trainers inside guide to your workout. New York, A&C Black.*

3.2 J. Gordon Betts Et.al. (2013) - *Anatomy and Physiology – OpenStax*

3.3 Bruce M. Carlson (2014) - *The Human Body – Elsevier/Saunders*

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3.4 Lindsay Biga et al. (2019)- *Anatomy & Physiology – Oregon State Open EducationalResources*

Module 4: Advanced Performance Enhancement Strategies

Hours of transaction:15

4.1 Ergogenic Aids: Mechanisms and Efficacy

- Advanced pharmacological, nutritional, and physiological ergogenic aids
- Mechanisms of action and evidence-based efficacy
- Ethical considerations and regulatory issues

4.2 Novel Training Modalities

- Advanced concepts in periodization and training program design
- High-intensity interval training (HIIT), plyometrics, and concurrent training
- Advanced resistance training methodologies and adaptations

4.3 Integrative Approaches to Performance Enhancement

- Interdisciplinary perspectives on optimizing athletic performance
- Integrating nutrition, psychology, biomechanics, and physiology
- Advanced techniques for individualized performance optimization

Suggested reading specific to the Module

4.1 V Muruguvalan, *Anatomy and Physiology for Physical Education*

4.2 Brice M Carlson, *The Human Body*

4.3 A K Uppal and Vivek Chaudhary, *Health, Education, Anatomy and Physiology*

4.4 Nick Draper, *Exercise Physiology for Health and Sports Performance*

Module 5 : Teacher Specific Module

Hours of transaction:10

- The respective teacher will prepare the module content, flexibly designing the material according to feasibility, prior modules, and pertinent information.

Core Compulsory Reading

- B. N. Gupta (2008) - *The role of Anatomy and Physiology – Alfa Publications*
- Graham Thompson (2010) *Physical Education – Anatomy and Exercise Physiology – Hodder Education Group*
- Tommy Boone (2017) – *A pressing concern in Exercise Physiology Commitment to Professionalism – Bentham Science Publications*

Core Suggested Reading

- Rod R. Seeley, Trent D. Stephens, Philip Tate. (2007) - *Anatomy and Physiology – McGraw-Hill*
- Garg, K., Mittal, P. S., & Chandrupatla, M. (2016). *Human Anatomy (7th Edn). New Delhi: CBS Publishers.*
- Waugh, A., & Grant, A. (2014). *Anatomy and physiology in health and illness (12th Edn). China: Churchill Livingstone Elsevier.*

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- Wingerd, B. (2014). *The human body: Concepts of anatomy and physiology (3rdEdn)*. Baltimore: Wolters Kluwer.
- Netter, F. H. (2003). *Atlas of human anatomy*. New Jersey: Icon Learning Systems. Thibodeau, G. A., & Patton, K. T. (2003). *Anatomy and physiology*. St. Louis, Missouri: Elsevier.
- Waugh, A., & Grant, A. (2010). *Anatomy and physiology*. Edinburgh: Elsevier.

TEACHING LEARNING STRATEGIES

- The class will be taught by using lectures and demonstrations, seminars, classroom discussions, videos, charts, and presentation methods.

MODE OF TRANSACTION

- Lecture//Laboratory Work/ Field Work/ Outreach Activities/ Project Work/ Vocational Training/Viva/ Seminars/ Term Papers/Assignments/ Presentations/ Self-Study etc

ASSESSMENT RUBRICS

Evaluation Type		Marks
End Semester Evaluation		50
Continuous Evaluation		50
a)	Test Paper – 1 (Written/Oral)	10
b)	Test Paper – 2 (Written/Oral)	10
c)	Assignment Seminar Record Viva-Voce Any other relevant mode of evaluation	(Any three - each for 10 marks) 10 X 3 = 30 Marks
Total		100

Sample Questions to test Outcomes.

1. Discuss the role of cardiovascular control mechanisms in regulating cardiac output during incremental exercise. How do these mechanisms differ between trained and untrained individuals?
2. What are the main factors contributing to muscle fatigue during exercise, and how do they differ between short bursts of intense activity and prolonged endurance efforts?
3. Discuss the role of proprioception in neuromuscular control and movement coordination. How can proprioceptive training enhance athletic performance and reduce injury risk?
4. How does high-intensity interval training (HIIT) differ from traditional steady-state cardio? What are the potential benefits and drawbacks of incorporating HIIT into an exercise routine?

SEMESTER VIII

KU7(8)DSEPES403*: SPORTS NUTRITION AND TRAINING ADAPTATIONS

Semester	Course Type	Course Level	Course Code	Credits	Total Hours
8	DSE	400	KU7(8)DSEPES403	4	60

Learning Approach (Hours/ Week)			Marks Distribution			Duration of ESE (Hours)
Lecture	Practical/ Internship	Tutorial	CE	ESE	Total	
60	-	60	50	50	100	2 hrs

Lecture/Tutorials, P/I=Practical/Internship, CE =Continuous Evaluation, ESE = End Semester Evaluation

*** Students does who have not opted honours with research can take DSE courses from Semester 7**

Course Description

This course is designed to equip students with the knowledge and skills necessary to understand the intricate relationship between nutrition and athletic performance. The course delves into fundamental principles of sports nutrition, explores nutritional strategies for enhancing performance, elucidates training adaptations and periodization concepts, and addresses advanced topics such as nutritional supplements, special populations, and psychological factors influencing

Course Outcomes:

At the end of the course, the student will be able to

CO No.	Expected outcome	Learning Domains
CO1	Understanding of the fundamental concepts of sports nutrition, including the significance of optimizing athletic performance.	R,U
CO2	Analyze specific nutritional needs for endurance, strength, and power athletes and implement carbohydrate loading and protein strategies for performance enhancement additionally, helps in understanding the role of supplements in strength and power sports.	R,U,An
CO3	Demonstrate understanding of the physiological responses to training and various periodization models for different sports and enable the implementation of nutritional strategies for optimizing training adaptations.	A,E

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CO4	Critically evaluate the efficacy, safety, and legality of nutritional supplements and develop tailored nutrition and training plans for special populations additionally to equip with psychological strategies to enhance adherence and performance.	A, AN
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***Remember (R), Understand (U), Apply (A), Analyse (An), Evaluate (E), Create(C)**

Mapping of Course Outcomes to PSOs

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1		✓				
CO2		✓		✓	✓	✓
CO3			✓			✓
CO4		✓	✓		✓	✓

Module 1: Fundamentals of Sports Nutrition

Hours of transaction:10

1.1 Introduction to Sports Nutrition

- Definition and importance of sports nutrition
- Macronutrients and micronutrients for athletes
- Dietary guidelines and recommendations for optimizing athletic performance

1.2 Energy Metabolism and Nutrient Timing

- Energy systems used during exercise
- Timing of nutrient intake for pre-, during, and post-exercise periods
- Role of carbohydrates, proteins, and fats in fueling exercise and recovery

1.3 Hydration and Electrolyte Balance

- Importance of hydration in sports performance
- Electrolyte needs during exercise and recovery
- Strategies for maintaining proper fluid and electrolyte balance

Suggested readings specific to the module.

1.1 Fink, Heather Hedrick (2006). *Practical Applications in Sports Nutrition.*

Jones and Bartlett Publishers.

1.2 Maughan, R. J. (Ed.). (2008). *Nutrition in sport (Vol. 7).* John Wiley & Sons.

1.3 Fink, H. H., & Mikesky, A. E. (2017). *Practical applications in sports nutrition.* Jones & Bartlett Learning.

1.4 Eberle, S. G. (2013). *Endurance Sports Nutrition, 3E.* Human Kinetics.

1.5 Nitika Thareja (2021) - *The Balanced Diet: Healthy*

1.6 Alice Callahan, Heather Leonard, Kimberly Powell (2020) - *Nutrition:*

Science and Everyday Application – Open Oregon Educational Resources

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1.7 Flavia Meyer, Zbigniew Szygula, Boguslaw Wilk. (2016) - Fluid Balance, Hydration and Athletic Performance – CRC Press

Module 2: Nutritional Strategies for Performance Enhancement

Hours of transaction:10

2.1 Nutritional Needs for Endurance Athletes

- Specific dietary considerations for endurance training and competition
- Carbohydrate loading and fueling strategies
- Optimizing glycogen stores for prolonged exercise

2.2 Nutrition for Strength and Power Athletes

- Protein requirements for muscle repair and growth
- Importance of nutrient timing for strength training adaptations
- Dietary supplements for strength and power athletes: efficacy and safety considerations

2.3 Weight Management and Body Composition

- Nutrition strategies for weight loss, maintenance, and gain
- Body composition assessment methods
- Eating disorders and disordered eating in athletes: prevention and intervention strategies.

Suggested readings specific to the module.

2.1 Robert E.C. Wildman, Barry S. Miller, (2004), "Sports and Fitness Nutrition", Thomson.

2.2 Bean, Anitha (2006), 5th ed, Sports Nutrition

2.3 Burke, Louise (2007), Practical Sports Nutrition, Human Kinetics

2.4 Dan Benardot (2011) - Advanced Sports Nutrition – Human Kinetics, Incorporated

2.5 Alice Callahan, Heather Leonard, Tamberly Powell (2020) - Nutrition: Science and Everyday Application – Open Oregon Educational Resources

2.6 1.4 Flavia Meyer, Zbigniew Szygula, Boguslaw Wilk. (2016) - Fluid Balance, Hydration and Athletic Performance – CRC Press

Module 3: Nutritional Strategies for training adaptations and periodization

Hours of transaction:10

3.1 Principles of Training Adaptation

- Physiological responses to exercise and training and concepts of overload, specificity, and progression principles
- Overview of periodization concepts and models
- Macrocycle, mesocycle, and micro cycle planning
- Application of periodization in different sports and disciplines

3.2 Nutritional Adaptations Across Periodization Cycles

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- Nutritional demands of athletes during different phases of periodization, including preparation, competition, and recovery periods.
- Macronutrient and micronutrient needs across different training intensities and volumes within periodization cycles.
- Strategies to adjust nutrient timing, composition, and supplementation to align with the goals of each phase of periodization.

3.3 Recovery Strategies and Regeneration

- Importance of recovery in optimizing training adaptations
- Active and passive recovery techniques: efficacy and implementation
- Integration of nutritional support with other recovery modalities to optimize training adaptations and minimize the risk of overtraining. (sleep hygiene, active rest, and stress management techniques)

Suggested readings specific to the module

3.1 Heather Hedrick Fink, Alan E. Mikesky (2020) - *Practical Application in Sports Nutrition*- Jones & Bartlett Learning, LLC

3.2 Anita Bean (2013) - *The Complete Guide to Sports Nutrition* – Bloomsbury Publishing

3.3 Bill Campbell (2013) - *Sports Nutrition: Enhancing Athletic Performance* Taylor & Francis

3.4 Benardot, Don (2000), *Advanced Sports Nutrition, Human Kinetics.*

3.5 Bompa, T. O., & Haff, G. G. (2018). *Periodization: Theory and methodology of training* (6th ed.). Human Kinetics.

3.6 Baechle, T. R., & Earle, R. W. (2008). *Essentials of strength training and conditioning* (3rd ed.). Human Kinetics

Module 4: Advanced Concepts in Sports Nutrition and Training

Hours of transaction: 10

4.1 Nutritional Supplements in Sports Performance

- Efficacy, safety, and legality of dietary supplements
- Common supplements used in sports and exercise
- Evidence-based recommendations for supplement use

4.2 Special Populations in Sports Nutrition and Training

- Nutrition and training considerations for youth athletes, masters' athletes, and special populations (e.g., pregnant athletes, vegetarian athletes)
- Managing medical conditions through nutrition and exercise

4.3 Psychological Factors in Nutrition and Training

- The role of psychology in adherence to nutrition and training protocols
- Mental strategies for enhancing performance and managing stress

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- Behavioral interventions for promoting healthy habits in athletes

Suggested readings specific to the module.

- 4.1** Eberle, S. G. (2013). *Endurance Sports Nutrition, 3E. Human Kinetics.*
- 4.2** Ryan, M. (2012). *Sports nutrition for endurance athletes. Velo Press.*
- 4.3** Campbell, B. (Ed.). (2013). *Sports nutrition: enhancing athletic performance. CRC 22 Press.*
- 4.4** Reaburn, P. R. (Ed.). (2014). *Nutrition and Performance in Masters Athletes. CRC Press.*
- 4.5** Slater, G., & Phillips, S. M. (2011). *Nutrition guidelines for strength sports: sprinting, weightlifting, throwing events, and bodybuilding. Journal of sportssciences, 29(sup1), S67-S77.*
- 4.6** Natalie Digate Muth, (2015), *Sports Nutrition for Health Professionals, F. A. Davis Company, 1915 Arch Street, Philadelphia, USA.*
- 4.7** Heather Hedrick fink, Lisa A. Burgoon, Alan E. Mikesy, (2006), *Practical Application in sports Nutrition”, Jones and Barlett.*
- 4.8** Burke, Louise (2007), *Practical Sports Nutrition, Human Kinetics.*
- 4.9** Gleeson, Jeukendrup (2004), *Sports Nutrition: an introduction to energy production and performance, Human Kinetics.*

Module 5 : Teacher Specific Module

Hours of transaction:10

- The respective teacher will prepare the module content, flexibly designing the material according to feasibility, prior modules, and pertinent information.

Core Compulsory Readings

- Fink, Heather Hedrick (2006). *Practical Applications in Sports Nutrition. Jones and Bartlett Publishers.*
- Maughan, R. J. (Ed.). (2008). *Nutrition in sport (Vol. 7). John Wiley & Sons.*
- Fink, H. H., & Mikesky, A. E. (2017). *Practical applications in sports nutrition. Jones & Bartlett Learning.*
- Eberle, S. G. (2013). *Endurance Sports Nutrition, 3E. Human Kinetics.*
- Ryan, M. (2012). *Sports nutrition for endurance athletes. Velo Press.*
- Campbell, B. (Ed.). (2013). *Sports nutrition: enhancing athletic performance. CRC 22 Press.*
- Reaburn, P. R. (Ed.). (2014). *Nutrition and Performance in Masters Athletes. CRC Press.*
- Slater, G., & Phillips, S. M. (2011). *Nutrition guidelines for strength sports: sprinting, weightlifting, throwing events, and bodybuilding. Journal of sports sciences, 29(sup1), S67-S77.*
- Christoph Zinner and Billy Sperlich. (2016). *Marathon Running:*

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Physiology, Psychology, Nutrition and Training Aspects

- Louise Burke (2007) - Practical Sports Nutrition – Human Kinetics
- Nancy Clark (2014) - Nancy Clark’s Sports Nutrition Guidebook, – HumanKinetics
- Heather Fink, Alan Mikesky, Lisa Burgoon (2011) - Practical Application inSports Nutrition – Jones & Bartlett Learning
- Melinda Manore, nanna L. Meyer, Janice Thompson (2009) Sports Nutritionfor Health and Performance – Human Kinetics

Core Suggested Readings

- Burke, Louise, and Vicki Deakin. (2015). Clinical sports nutrition. McGraw-Hill.
- Broad, E. (Ed.). (2014). Sports Nutrition for Paralympic Athletes. CRC Press.
- Maughan, R. J., & Shirreffs, S. M. (Eds.). (2013). Food, Nutrition and SportsPerformance III. Routledge.
- Campbell, B. (Ed.). (2013). Sports nutrition: enhancing athletic performance.CRC Press.
- Larson-Meyer, D. E. (2007). Vegetarian sports nutrition. Human Kinetics.
- Marie Dunford. (2017) Nutrition for Sport and Exercise.
- LeMura, L. M., & Von Duvillard, S. P. (Eds.). (2004). Clinical exercise physiology: application and physiological principles. Lippincott Williams & Wilkins.
- Cheung, S. (2010). Advanced environmental exercise physiology. Human Kinetics.
- Emmanuel A. Andreadis - Hypertension and Cardiovascular diseases – Springer International Publishing
- Deakin, Burke (2006), 3rd, Clinical Sports Nutrition, McGraw- Hill Austria.
- Bourns, Fred (ed), Essentials of Sports Nutrition, 2nd Ed (2002), John andWiley.
- Benardot, Don (2000), Advanced Sports Nutrition, Human Kinetics.
- Burke, Louise (2007), Practical Sports Nutrition, Human Kinetics.
- Gleeson, Jeukendrup (2004), Sports Nutrition: an introduction to energyproduction and performance, Human Kinetics.

TEACHING LEARNING STRATEGIES

The class will be taught by using lectures and demonstrations, seminars, classroomdiscussions, videos, charts, and presentation methods.

MODE OF TRANSACTION

Lecture//Laboratory Work/ Field Work/ Outreach Activities/ Project Work/ Vocational Training/Viva/ Seminars/ Term Papers/Assignments/ Presentations/ Self-

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Studyetc

ASSESSMENT RUBRICS

Evaluation Type		Marks
End Semester Evaluation		50
Continuous Evaluation		50
a)	Test Paper – 1 (Written/Oral)	10
b)	Test Paper – 2 (Written/Oral)	10
c)	Assignment Seminar Record Viva-Voce Any other relevant mode of evaluation	(Any three - each for 10 marks) 10 X 3 = 30 Marks
Total		100

Sample Questions to test Outcomes.

1. How the Timing of nutrient intake for pre-, during, and post-exercise periods affect performance of an athlete.
2. Discuss the Nutritional demands of athletes during different phases of periodization, including preparation, competition, and recovery periods
3. Explain the strategies for integrating nutritional support with recovery modalities to optimize training adaptations.
4. Explain various behavioral interventions for building the healthy eating habits

SEMESTER VIII

KU7(8)DSSPES404*: SCIENCE OF COACHING

Semester	Course Type	Course Level	Course Code	Credits	Total Hours
8	DSE	400	KU7(8)DSEPE404	4	60

Learning Approach (Hours/ Week)			Marks Distribution			Duration of ESE (Hours)
Lecture	Practical/ Internship	Tutorial	CE	ESE	Total	
60	-	60	50	50	100	2 hrs

Lecture/Tutorials, P/I=Practical/Internship, CE =Continuous Evaluation, ESE = End Semester Evaluation

*** Students does who have not opted honours with research can take DSE courses from Semester 7**

Course Description

This syllabus provides a comprehensive overview of coaching science at the capstone level, covering essential topics such as coaching theory, biomechanics, physiology, leadership, and ethics of sports coaching.

Course Outcomes: At the end of the course, the student will be able to

CO No.	Expected outcome	Learning Domains
CO1	Demonstrate a comprehensive understanding of the foundational principles and theories of coaching science	R,U,A
CO2	Proficiency in applying biomechanical concepts to analyze human movement, identify areas for improvement, and implement strategies to optimize athletic performance	U,A,An
CO3	Develop a comprehensive understanding of the physiological principles underpinning athletic performance and conditioning in the context of coaching.	,U,A
CO4	Develop a comprehensive understanding of the critical role of leadership and ethical considerations in coaching.	A, AN

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***Remember (R), Understand (U), Apply (A), Analyse (An), Evaluate (E), Create(C)**

Mapping of Course Outcomes to PSOs

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	✓	✓	✓		✓	✓
CO2	✓		✓	✓		✓
CO3	✓	✓		✓	✓	✓
CO4	✓	✓	✓		✓	✓

COURSE CONTENTS

Module 1: Foundations of Coaching Science

Hours of transaction:10

1.1 Introduction to Coaching Science

- Definition and scope of coaching science
- Historical perspectives and evolution of coaching
- The role of coaching in athlete development and performance enhancement

1.2 Coaching Theory and Models

- Overview of coaching theories and models, Coach-athlete relationship
- Application of coaching theories in different sports contexts
- Examination of influential coaching models and their effectiveness

1.3 Psychology in Coaching

- Understanding athlete motivation and behavior
- Psychological factors affecting coaching effectiveness
- Techniques for enhancing athlete mindset and mental resilience

Suggested readings specific to the Module

- 1.1** Lyle, J. (2002). *Sports coaching concepts: A framework for coaches' behavior.* Routledge.
- 1.2** Gilbert, W., & Trudel, P. (2004). *Learning to coach through experience: Reflection in model youth sport coaches. Physical Education and Sport Pedagogy, 9(1), 27-47.*
- 1.3** Horn, T. S., & Horn, J. L. (2007). *Advances in sport psychology. Human Kinetics.*
- 1.4** Dick FW (1999). *Sport training Principles. A and C Black. London.*
- 1.5** Newton H (2006). *Explosive lifting for sports. Human Kinetics. US.*

Module 2: Biomechanics and Movement Analysis in Coaching

2.1 Biomechanical Principles in Coaching

- Fundamentals of biomechanics and their application in coaching
- Analysis of human movement in sports
- Biomechanical considerations for optimizing athletic performance and injury prevention

2.2 Technology in Movement Analysis

- Utilization of technology in movement analysis
- Video analysis techniques for coaching feedback and performance evaluation
- Wearable technology and its impact on athlete monitoring and assessment

2.3 Skill Acquisition and Motor Learning

- Theories of skill acquisition and motor learning
- Coaching strategies to facilitate skill acquisition and motor skill development
- Feedback techniques to enhance skill acquisition and performance

Suggested readings specific to the Module

2.1 Bartlett, R., Wheat, J., & Robins, M. (2007). *Is movement variability important for sports biomechanisms*, *Sports Biomechanics*, 6(2), 224-243.

2.2 Glazier, P. S. (2017). *Movement skill assessment*. Routledge.

2.3 Magill, R. A., & Anderson, D. I. (2017). *Motor learning and control: Concepts and applications*. McGraw-Hill Education.

2.4 Singh Hardayal (1991). *Science of Sport Training*. D.V.S Pub. Delhi.

2.5 Haff, G., & Triplett, N. *Essentials of strength training and conditioning*. Champaign, IL.: Human Kinetics.

Module 3: Physiology and Conditioning in Coaching Hours of transaction:10

3.1 Exercise Physiology Fundamentals

- Basic principles of exercise physiology relevant to coaching
- Energy systems and their contribution to athletic performance
- Physiological responses to training and exercise

3.2 Strength and Conditioning Principles

- Principles of strength and conditioning programming
- Periodization and planning for athletic development
- Strength training techniques and modalities

3.3 Nutrition and Recovery Strategies

- Nutritional considerations for optimizing performance and recovery
- Hydration strategies for athletes
- Recovery techniques to enhance post-exercise recovery and reduce injury risk

Suggested readings specific to the Module

3.1 Haff, G., & Triplett, N. *Essentials of strength training and conditioning*.

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Champaign, IL.: Human Kinetics

3.2 Bompa. T.O. (1994). *Theory and Methods of Training-A Key to Athletic Performance (3rd Ed.)*. Kandwall Hunt Publication Co.

3.3 Bompa, T., & Haff, G. (2009). *Periodization*. Champaign, IL.: Human Kinetics. ISBN-13: 9780736074834

3.4 Baechle T R & Earle R W (2000). *Essentials of strength training and conditioning*.

Human Kinetics. The USA.

3.5 Zatsiorsky, V., & Kraemer, W. (2006). *Science and practice of strength training*.

Champaign, IL: Human Kinetics.

Module 4: Leadership and Ethical Issues in Coaching Hours of transaction:10

4.1 Leadership in Coaching

- Leadership styles and their impact on coaching effectiveness
- Strategies for building positive coach-athlete relationships
- Effective communication and motivational techniques in coaching

4.2 Ethical Considerations in Coaching

- Ethical principles and dilemmas in coaching practice
- Safeguarding athletes' welfare and well-being
- Professional conduct and ethical decision-making in coaching

4.3 Coach Development and Continuous Learning

- Importance of ongoing coach development and education
- Professional organizations and resources for coaches
- Strategies for self-reflection and continuous improvement as a coach

Suggested readings specific to the Module

4.1 Lyle, J. (2002). *Sports coaching concepts: A framework for coaches' behavior*. Routledge.

4.2 Gilbert, W., & Trudel, P. (2004). *Learning to coach through experience: Reflection in model youth sport coaches*. *Physical Education and Sport Pedagogy*, 9(1), 27-47.

4.3 Horn, T. S., & Horn, J. L. (2007). *Advances in sport psychology*. Human Kinetics.

4.4 Jowett, S., & Cockerill, I. M. (2003). *Olympic medallists' perspective of the athlete-coach relationship*. *Psychology of Sport and Exercise*, 4(4), 313-331.

4.5 Lyle, J. (2018). *Sports coaching handbook*. Routledge.

4.6 Wylleman, P., & Lavallee, D. (2004). *A developmental perspective on transitions faced by athletes*. In A. M. L. McNeill & W. J. Courtenay (Eds.), *Developing sport expertise: Researchers and coaches put theory*

into practice(pp. 259-276). Routledge.

Module 5: Teacher Specific Module

Hours of transaction:10

- The respective teacher will prepare the module content, flexibly designing the material according to feasibility, prior modules, and pertinent information.

Core Compulsory readings

- BeotraAlka, (2000), Drug Education Handbook on Drug Abuse in Sports.Delhi: Sports Authority of India.
- Bunn, J.N. (1998) Scientific Principles of Coaching, New Jersey Engle WoodCliffs, Prentice Hall Inc.
- Baechle T R & Earle R W (2000). Essentials of strength training and conditioning. Human Kinetics. USA.
- Bompa. T.O. (1994). Theory and Methods of Training-A Key to AthleticPerformance (3rd Ed.). Kandwall Hunt Publication Co.
- Bompa, T., & Haff, G. (2009). Periodization. Champaign, IL.: Human Kinetics.ISBN-13: 9780736074834
- Bompa. T.O. and G. Gregory Hett. (2009) Periodization: Theory and Methodology of Training.
- Bompa, T., & Carrera, M. (2005). Periodization training for sports. Champaign, Ill.: Human Kinetics.
- Cart, E. Klafs& Daniel, D. Arnhem (1999) Modern Principles of AthleticTraining St. Louis C. V. Mosphy Company
- Dick FW (1999). Sport training Principles. A and C Black. London

Core suggested readings

- Wuest, D., & Fisetite, J. (2014) Foundations of physical education, exercisescience, and sport. McGraw-Hill Higher Education.
- Daniel, D. Arnhem (1991) Principles of Athletic Training, St. Luis, Mosby.
- Haff, G., & Triplett, N. Essentials of strength training and conditioning. Champaign, IL.: Human Kinetics.
- Singh Hardayal (1991). Science of Sport Training. D.V.S Pub. Delhi.
- Newton H (2006). Explosive lifting for sports. Human Kinetics. US.
- Zatsiorsky, V., & Kraemer, W. (2006). Science and practice of strengthtraining. Champaign, IL: Human Kinetics.

LIST OF PRACTICUMS

- To prepare a training plan (Session plan, days plan, micro cycle plan, mesocycle plan, and macrocycle plan in different periods of training for various sports events)
- Evaluation of training (Testing of motor components and performance)

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TEACHING LEARNING STRATEGIES

The subject will be taught by using lectures, demonstrations, seminars, classroom discussions, charts, and presentation methods.

MODE OF TRANSACTION

Lecture//Laboratory Work/Field Work/ Outreach Activities/Project Work/ Vocational Training/Viva/ Seminars/ Term Papers/Assignments/ Presentations/ Self-Study etc.

ASSESSMENT RUBRICS

Evaluation Type		Marks
End Semester Evaluation		50
Continuous Evaluation		50
a)	Test Paper – 1 (Written/Oral)	10
b)	Test Paper – 2 (Written/Oral)	10
c)	Assignment Seminar Record Viva-Voce Any other relevant mode of evaluation	(Any three - each for 10 marks) 10 X 3 = 30 Marks
Total		100

Sample Questions to test Outcomes.

- Discuss the role of coaching in overall athlete development and performance enhancement
- Explain the psychological factors affecting coaching effectiveness
- Discuss about the ethical principles and dilemmas found in coaching practice
- Explain various coaching strategies to facilitate skill acquisition and motor skill development

SEMESTER IX**KU9DSCPE501: ADVANCED PERIODISATION AND PROGRAMME DESIGNING**

Semester	Course Type	Course Level	Course Code	Credits	Total Hours
9	DSC	500	KU9DSCPE501	4	75

Learning Approach (Hours/ Week)			Marks Distribution			Duration of ESE (Hours)
Lecture	Practical/ Internship	Tutorial	CE	ESE	Total	
45	30	75	50	50	100	2 hrs

Lecture/Tutorials, P/I=Practical/Internship, CE =Continuous Evaluation, ESE = End Semester Evaluation

Course Description

This course provides a foundational understanding of exercise programme design and periodization, essential components for fitness professionals, trainers, and exercise enthusiasts. It provides insights into the principles of program design, progression, and the application of periodization to optimize training outcomes. The course includes both theoretical concepts and practical applications, allowing participants to design effective training plans tailored to specific needs and goals.

Course Outcomes: At the end of the course, the student will be able to

CO No.	Expected outcome	Learning Domains
CO1	To understand the concept of periodization and its application in training	R,U
CO2	To explore different training methods, exercise modalities, and their application.	R,U,A
CO3	Acquire advanced knowledge of in-season periodization, individualized planning, and sport-specific considerations.	R,U,A,E
CO4	Demonstrate proficiency in assessing, monitoring, and adapting periodized plans for optimal results. To provide	A, An,E,C

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	practical experience designing exercise programs through hands-on assignments and case studies.	
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***Remember (R), Understand (U), Apply (A), Analyse (An), Evaluate (E), Create (C)**

Mapping of Course Outcomes to PSOs

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1		✓	✓	✓	✓	✓
CO2	✓	✓		✓		✓
CO3		✓	✓	✓		✓
CO4		✓	✓	✓		✓

Module 1 : Basics of training

Hours of transaction:10

1.1 Training

- Principles and objectives of training
- General and sports-specific physical training.
- Understanding the Training System and its components

1.2 Variables of training

- Intensity, volume, complexity, and density of training.
- Rest, recovery, and work rest intervals

1.3 Motor components

- Classification of Motor Components
- Factors Affecting Motor Components,
- Means and Methods of Developing Various Motor Components
- Warming up and cool down protocols

1.4 Training Effect and Adaptation

- Process of Adaptation
- Super compensation cycle

1.5 Energy system and training

Suggested readings specific to the Module

- 1.1** Haff, G., & Triplett, N. *Essentials of strength training and conditioning* NSCA. Champaign, IL.: Human Kinetics.
- 1.2** Baechle T R & Earle R W (2000). *Essentials of strength training and conditioning.* Human Kinetics. USA.
- 1.3** Bompa. T.O. (1994). *Theory and Methods of Training-A Key to Athletic*

Performance (3rd Ed.). Kandwall Hunt Publication Co.

Module 2 : Introduction to Periodization

Hours of transaction:15

2.1 Overview of periodization concepts

- Defining Periodization: Understanding the concept of organizing training into distinct phases.
- Historical Evolution: Tracing the origins and development of periodization in sports and fitness.
- Benefits and rationale of Periodization: How periodized training optimizes adaptation, prevents overtraining, and enhances performance and why a periodized structured approach is crucial for long-term athletic development.

2.2 Principles and Foundations

- Principles of Periodization: Principles such as specificity, overload, and progression within the context of periodized training.
- Foundations of Periodization: Understanding the physiological and psychological foundations that underpin periodization.
- Training sessions: Types and structure of training sessions, understanding the importance of planning a training session
- Pre-training assessments and monitoring

Suggested readings specific to the Module

2.1 Bompa, T., & Carrera, M. (2005). *Periodization training for sports*. Champaign, Ill.: Human Kinetics.

2.2 Cart, E. Klafs & Daniel, D. Arnheim (1999) *Modern Principles of Athletic Training* St. Louis C. V. Mosphy Company

2.3 Bunn, J.N. (1998) *Scientific Principles of Coaching*, New Jersey Engle Wood Cliffs, Prentice Hall Inc.

2.4 Bompa. T.O. (1994). *Theory and Methods of Training-A Key to Athletic Performance (3rd Ed.)*. Kandwall Hunt Publication Co.

Module 3: Planning Annual Training Cycles and Periodisation Models

Hours of transaction:20

3.1 Annual training plan (ATP)

- Phases of Annual Planning and characteristics
- Incorporating Different Training Cycles strategically into annual planning:
- Integration of periodization principles with Annual Planning
- Definition and strategies for peaking, tapering techniques

3.2 Periodization Models

- Types of periodization models; Linear, nonlinear, block, and conjugating periodisation
- Preparation of sample training plans for various tasks

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- Developing a comprehensive overview of the year's training structure for various teams/sports.

Suggested readings specific to the Module

3.1 Bompa, T., & Haff, G. (2009). *Periodization*. Champaign, IL.: Human Kinetics. ISBN-13: 9780736074834

3.2 Baechle T R & Earle R W (2000). *Essentials of strength training and conditioning*. Human Kinetics. USA.

3.3 Bompa. T.O. (1994). *Theory and Methods of Training-A Key to Athletic Performance (3rd Ed.)*. Kandwall Hunt Publication Co.

Module 4: Applying periodization in exercise program design

Hours of transaction:20

4.1 Understanding Programme Design

- Integration of Periodization within Exercise Program Design
- Special Considerations in Program Design

4.2 Periodization for Different goals

- Periodisation for various motor abilities
- Hypertrophy and Strength Phases: Structuring training cycles to emphasize muscle growth and strength development.
- Power and Speed Phases: Focusing on explosive movements and maximal speed during specific periods.

4.3 Advanced Concepts in Periodization

- Applying Sport Seasons to the Periodization Periods
- Sports-specific program design
- Programme Design for Resistance Training During Rehabilitation and Reconditioning

4.4 Preparing sample training cycles for various seasons.

Module 5 : Teacher Specific Module

Hours of transaction:10

- The respective teacher will prepare the module content, flexibly designing the material according to feasibility, prior modules, and pertinent information

Suggested readings specific to the Module

4.1 Haff, G., & Triplett, N. *Essentials of strength training and conditioning NSCA*. Champaign, IL.: Human Kinetics.

4.2 Baechle T R & Earle R W (2000). *Essentials of strength training and conditioning*. Human Kinetics. USA.

4.3 Bompa. T.O. (1994). *Theory and Methods of Training-A Key to Athletic Performance (3rd Ed.)*. Kandwall Hunt Publication Co.

Core Compulsory readings

- Bompa. T.O. (1994). *Theory and Methods of Training-A Key to Athletic*

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Performance (3rd Ed.). Kandwall Hunt Publication Co.

- Bompa, T., & Haff, G. (2009). Periodization. Champaign, IL.: Human Kinetics. ISBN-13: 9780736074834
- BeotraAlka, (2000), Drug Education Handbook on Drug Abuse in Sports. Delhi: Sports Authority of India.
- Bunn, J.N. (1998) Scientific Principles of Coaching, New Jersey Engle Wood Cliffs, Prentice Hall Inc.
- Baechle T R & Earle R W (2000). Essentials of strength training and conditioning. Human Kinetics. USA.
- Bompa. T.O. and G. Gregory Hett. (2009) Periodization: Theory and Methodology of Training.
- Bompa, T., & Carrera, M. (2005). Periodization training for sports. Champaign, Ill.: Human Kinetics.
- Cart, E. Klafs & Daniel, D. Arnheim (1999) Modern Principles of Athletic Training St. Louis C. V. Mosphy Company
- Dick FW (1999). Sport training Principles. A and C Black. London
- Haff, G., & Triplett, N. Essentials of strength training and conditioning. Champaign, IL.: Human Kinetics.
- Singh Hardayal (1991). Science of Sport Training. D.V.S Pub. Delhi.
- Newton H (2006). Explosive lifting for sports. Human Kinetics. US.
- Zatsiorsky, V., & Kraemer, W. (2006). Science and practice of strength training. Champaign, IL: Human Kinetics.

Core suggested readings

- Bompa. T.O. and G. Gregory Hett. (2009) Periodization: Theory and Methodology of Training.
- Wuest, D., & Fiset, J. (2014) Foundations of physical education, exercise science, and sport. McGraw-Hill Higher Education.
- Daniel, D. Arnheim (1991) Principles of Athletic Training, St. Luis, Mosby.

LIST OF PRACTICUMS

- Create a comprehensive ATP for a specific athlete or sport.
- Communicate and present a periodized plan effectively.
- Evaluation of training (Implement pre-training assessments and ongoing monitoring techniques)

TEACHING LEARNING STRATEGIES

The subject will be taught by using lectures, demonstrations, seminars, classroom discussion, charts, and presentation methods.

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MODE OF TRANSACTION

Lecture//Laboratory Work/Field Work/ Outreach Activities/Project Work/ Vocational Training/Viva/ Seminars/ Term Papers/Assignments/ Presentations/ Self-Study etc.

ASSESSMENT RUBRICS

Evaluation Type		Marks
End Semester Evaluation		50
Continuous Evaluation		50
a)	Test Paper – 1 (Written/Oral)	10
b)	Test Paper – 2 (Written/Oral)	10
c)	Assignment Seminar Record Viva-Voce Any other relevant mode of evaluation	(Any three - each for 10 marks) 10 X 3 = 30 Marks
Total		100

Sample Questions to test Outcomes.

- Explain the methods of integration of periodization principles with Annual Planning
- Define and explain peaking
- Discuss the strategies for periodisation for hypertrophy.
- Discuss the programme design for resistance training during rehabilitation and Reconditioning

SEMESTER IX

KU9DSCPE502: RECOVERY SCIENCE AND PEAK PERFORMANCE

Semester	Course Type	Course Level	Course Code	Credits	Total Hours
9	DSC	500	KU9DSCPE502	4	75

Learning Approach (Hours/ Week)			Marks Distribution			Duration of ESE (Hours)
Lecture	Practical/ Internship	Tutorial	CE	ESE	Total	
45	30	75	50	50	100	2 hrs

Lecture/Tutorials, P/I=Practical/Internship, CE =Continuous Evaluation, ESE = End Semester Evaluation

Course Description

This course employs a multifaceted approach to delve into the complex mechanisms involved in post-exercise recovery, encompassing the dynamics of load control, fatigue management, and energy system optimization. students will gain comprehensive insights into these intricate processes, equipping them with the knowledge and skills necessary to develop effective recovery strategies tailored to individual needs.

Course Outcomes: At the end of the course, the student will be able to

CO No.	Expected outcome	Learning Domains
CO1	To understand the concept and mechanism of fatigue and recovery.	R, U
CO2	To identify the physiology of recovery with training load, energy systems, energy production, and rest.	R,U,A
CO3	To understand the nutritional and psychological aspects of recovery.	R,U,A
CO4	To identify the factors that underpin the recovery and regeneration process and the specific methods and strategies of recovery	A, An,E

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CO5	To apply recovery strategies based on load dynamics and fatigue recovery assessment in a variety of sports settings.	A, An, E
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***Remember (R), Understand (U), Apply (A), Analyse (An), Evaluate (E), Create (C)**

Mapping of Course Outcomes to PSOs

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	✓	✓	✓			
CO2		✓	✓	✓		✓
CO3		✓		✓		✓
CO4		✓	✓	✓	✓	
CO5		✓	✓	✓	✓	✓

Module 1: Introduction to Athlete Recovery and Regeneration

Hours of transaction:15

- 1.1 Recovery from Exercise
- 1.2 Factors for Recovery
- 1.3 Load dynamics and fatigue-recovery process
- 1.4 The energy systems

Suggested readings specific to the Module

- 1.1 Kellmann, Michael and Beckmann Jürgen (2021) *Recovery and Well-being in Sport and Exercise*. Routledge
- 1.2 Philips Shaun (2015) *Fatigue in Sport and Exercise*. Routledge
- 1.3 William D. McArdle, Frank I. Katch, and Victor L. Katch "Exercise Physiology: Nutrition, Energy, and Human Performance" Lippincott Williams & Wilkins; 8th edition (24 February 2014)

Module 2: Training, Overtraining and Fatigue

Hours of transaction:15

- 2.1 Load Monitoring for health and performance
- 2.2 Internal and external load monitoring
- 2.3 Overtraining – stages and symptoms
- 2.4 Fatigue mechanisms and overtraining syndrome

Suggested readings specific to the Module

- 2.1 "Essentials of Strength Training and Conditioning" by NSCA (National Strength

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and Conditioning Association)

2.2 Philips Shaun (2015) *Fatigue in Sport and Exercise* . Routledge

2.3 J C Santana (2003) "Optimal Load Training: Toward Breaking the Cycle of Overtraining and Plateau" by J.C. Santana. *Human Kinetics*.

2.4 Ward Paul and Knapman, Joe (2008) "Fatigue Science for Human Health" CRC Press

Module 3: Recovery – Physiological and Psychological Aspects

Hours of transaction:15

3.1 Musculoskeletal System and Effect of Exercise

3.2 Skeletal muscle damage, Energy Substrates, and metabolic Byproducts

3.3 Neurophysiology of Stress– Exercise and Brain Health

3.4 Psychoneuroimmunology

Suggested readings specific to the Module

3.1 Inigo Mujika (2019) "Recovery for Performance in Sport" *Human Kinetics*

3.2 Sage Rountree (2011) "The Athlete's Guide to Recovery: Rest, Relax, and Restore for Peak Performance" *VeloPress*

3.3 Ward Paul and Knapman, Joe (2008) "Fatigue Science for Human Health" CRC Press

Module 4: Recovery Strategies: Applications and Research

Hours of transaction:15

4.1 Rest, Sleep and Recovery – Circadian Rhythm and Sleep Hygiene

4.2 Nutrition, Hydration and Supplementation

4.3 Stretching, massage and myofascial release

4.4 Wearable devices and advanced recovery monitoring and strategies

Suggested readings specific to the Module

4.1 *Craig Smith (2016) "Optimal Recovery: How to Recover from Overtraining" by Craig Smith. CreateSpace Independent Publishing Platform*

4.2 *David Joyce and Daniel Lewindon (2014) "High-Performance Training for Sports" Routledge*

4.3 *Christopher Johnson (2017) "Recovery Science: A Practical Guide for Busy Healthcare Professionals" CreateSpace Independent Publishing Platform*

Module 5 : Teacher Specific Module

Hours of transaction:15

- The respective teacher will prepare the module content, flexibly designing the material according to feasibility, prior modules, and pertinent information

Core Compulsory readings

- Olivier Girard and Iñigo Mujika (2020) "Recovery in Training: The Essential Ingredient in the Athlete's Physical Preparation" *Routledge*
- Kellmann, Michael and Beckmann Jürgen (2021) *Recovery and Well-being in Sport*

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and Exercise. Routledge

- Philips Shaun (2015) Fatigue in Sport and Exercise . Routledge
- William D. McArdle, Frank I. Katch, and Victor L. Katch "Exercise Physiology: Nutrition, Energy, and Human Performance" Lippincott Williams & Wilkins; 8th edition (24 February 2014)
- "Essentials of Strength Training and Conditioning" by NSCA (National Strength and Conditioning Association)
- Philips Shaun (2015) Fatigue in Sport and Exercise . Routledge
- J C Santana (2003) "Optimal Load Training: Toward Breaking the Cycle of Overtraining and Plateau" by J.C. Santana. Human Kinetics.

LIST OF PRACTICUMS

- Recovery Assessment among athletes
- Massage, Stretching and Myofascial Release
- Application of Recovery strategies – Field work and research

TEACHING LEARNING STRATEGIES

The subject will be taught by using lectures, demonstrations, seminars, classroom discussion, charts, and presentation methods.

MODE OF TRANSACTION

Lecture//Laboratory Work/Field Work/ Outreach Activities/Project Work/ Vocational Training/Viva/ Seminars/ Term Papers/Assignments/ Presentations/ Self-Study etc.

ASSESSMENT RUBRICS

Evaluation Type		Marks
End Semester Evaluation		50
Continuous Evaluation		50
a)	Test Paper – 1 (Written/Oral)	10
b)	Test Paper – 2 (Written/Oral)	10
c)	Assignment Seminar Record Viva-Voce Any other relevant mode of evaluation	(Any three - each for 10 marks) 10 X 3 = 30 Marks
Total		100

Sample Questions to test Outcomes

1. Discuss the advantages using of Wearable devices and advanced recovery monitoring and strategies
2. What is substrate depletion and discuss the role of substrate depletion in recovery
3. Describe the significance of Stretching, massage and myofascial release as mean of recovery

SEMESTER IX

**KU9DSCPES503: ADVANCED SPORTS ANALYTICS
(Interdisciplinary Course (IDC) offered with School of Information Technology)**

Semester	Course Type	Course Level	Course Code	Credits	Total Hours
9	DSC	500	KU9DSCPES503	4	90

Learning Approach (Hours/ Week)			Marks Distribution			Duration of ESE (Hours)
Lecture	Practical/ Internship	Tutorial	CE	ESE	Total	
30	60	90	50	50	100	2 hrs

Lecture/Tutorials, P/I=Practical/Internship, CE =Continuous Evaluation, ESE = End Semester Evaluation

Course Description

This Sports Analytics course offers a comprehensive exploration of the intersection between sports, data management, and statistical analysis. Students learn to navigate diverse datasets, employ analytical models, and utilize tools like Microsoft Excel, Python, and R to measure player and team performance and predict game outcomes.

Course Outcomes: At the end of the course, the student will be able to

CO No.	Expected outcome	Learning Domains
CO1	Demonstrate proficiency in utilizing sports analytics techniques, data management systems, and statistical methods to analyze sports-related data effectively in the field of spots.	A,An,E,
CO2	Exhibit proficiency in utilizing spreadsheet software such as Excel, as well as programming languages like Python and statistical software like R, to effectively manipulate, analyze, and visualize sports-related data.	A,An,E,
CO3	Proficiency in applying statistical methods, including regression analysis, to measure and evaluate the performance of players and teams in sports, as well as predicting outcomes of games, tournaments, and seasons.	A,An,E,

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CO4	Demonstrate advanced proficiency in evaluating athletes' performance, assessing performance outcomes	A,An,E,
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***Remember (R), Understand (U), Apply (A), Analyse (An), Evaluate (E), Create (C)**

Mapping of Course Outcomes to PSOs						
	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1		✓	✓			✓
CO2		✓	✓			✓
CO3	✓	✓	✓			✓
CO4		✓	✓			✓

COURSE CONTENTS

Module 1 - Introduction to sports analytics, data management and statistics

Hours of transaction:20

- 1.1 Introduction to sports analytics and aims of sports analytics, future, and scope of sports analytics.
- 1.2 Data management system, types of data, big data in sports – types available – methods to capture and store, leading to analysis.
- 1.3 Analytics Models – Information system – analytics in the organization, Organizational structures for analytical success
- 1.4 Reintroducing Microsoft Excel, Basic probability, linear regression and properties of normal distribution and types of errors

Suggested readings specific to the module.

- 1.1 Alamar (2024): *Sports Analytics: A Guide for Coaches, Managers and Other Decision Makers*
- 1.2 Fried, Mumcu (2016): *Sports Analytics: A data-driven approach to sport business and management.*
- 1.3 Ratten, and Hayduk (2020): *Statistical Modelling and Sports Business Analytics*
- 1.4 Pino-Ortega and Rico-Gonzalez (2021): *The Use of Applied Technology in Team Sport*
- 1.5 Neter, and Wasserman (1974): *Applied Linear Statistical Models: Regression, Analysis of Variance, and Experimental Designs*

Module 2 - Basic skills in Microsoft Excel and Programming and statistical package

Hours of transaction:30

- 2.1 Basic Spreadsheet functions, manipulating data, reading data.
- 2.2 Data filtering capabilities of Excel, the construction of pivot tables to organize data and constructing various Line, Bar and Pie charts. Using the Pivot Chart features of Excel, Constructing Histograms and Scatterplots.
- 2.3 Introduction to Python Programming and coding
- 2.4 Introduction to R and other Statistical software.

Suggested readings specific to the module

- 2.1 Matheson (2021): *Microsoft Office for 365 Beginners.*
- 2.2 Parker (2020): *Excel 2020: Learn Excel Essential Skills with Smart Methods*
- 2.3 Simplilearn (2020): *Data Analytics Basics- A Beginners Guide.*
- 2.4 Davies (2016): *The Book of R: A First Course in Programming and Statistics.*
- 2.5 Dalgaard (2008): *Introductory Statistics with R*
- 2.6 Jaworski, and Ziade (2021) – *Expert python Programming*

Module 3 - Predictive Analytics in Sports

Hours of transaction:20

- 3.1 Players and teams – Measuring performance.
- 3.2 Statistical – Regression – Single Linear Regression, Multiple Linear Regression
- 3.3 Predicting outcomes of games, tournaments, and seasons
- 3.4 Rating sports teams with regression analysis

Suggested readings specific to the module

- 3.1 Martin (2016): *Sports Performance Measurement and Analytics: The Science of Assessing Performance, Predicting Future Outcomes, Interpreting Statistical Models, and Evaluating the Market Value of Athletes.*
- 3.2 Passos, Araujo and Volossovitch (2016): *Performance Analysis in Team Sports*
- 3.3 Matloff (2017): *Statistical Regression and Classification: From Linear Model to Machine Learning*
- 3.4 Chatterjee, and Simonoff (2020): *Handbook of regression Analysis with Application R.*
- 3.5 Hughes, Franks, and Franks (2019): *Essentials of Performance Analysis in Sport: Third Edition*

Module 4 - Prescribing analytics

Hours of transaction:10

- 4.1 Evaluating athletes' performance using the data-driven methods
- 4.2 Evaluating the performance through profit and loss
- 4.3 Evaluating game-based metrics into financial assets parameters

Module 5 : Teacher Specific Module

Hours of transaction:10

- The respective teacher will prepare the module content, flexibly designing the

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material according to feasibility, prior modules, and pertinent information.

Core compulsory readings.

- 4.1 Guerrero (2018): *Excel Data Analysis: Modelling and Simulation*
- 4.2 Peng (2016): *R Programming for Data Science*
- 4.3 Green (2021): *A Step-By-Step Guide for Beginners to Learn Valuable Excel Skills.*
- 4.4 O'Donoghue (2009): *Research Methods for Sports Performance Analysis.*
- 4.5 Gomez-Ruano, Ibanez and Leicht (2020): *Performance Analysis in Sport.*

TEACHING LEARNING STRATEGIES

- The class will be taught by using lectures and demonstration, seminars, classroom discussion, videos, charts and presentations method.

MODE OF TRANSACTION

- Lecture//Laboratory Work/ Field Work/ Outreach Activities/ Project Work/ Vocational Training/Viva/ Seminars/ Term Papers/Assignments/ Presentations/ Self-Study etc.,

ASSESSMENT RUBRICS

Evaluation Type		Marks
End Semester Evaluation		50
Continuous Evaluation		50
a)	Test Paper – 1 (Written/Oral)	10
b)	Test Paper – 2 (Written/Oral)	10
c)	Assignment Seminar Record Viva-Voce Any other relevant mode of evaluation	(Any three - each for 10 marks)
Total		100

Sample Questions to test Outcomes.

1. How does the use of large data set benefit sports organizations, and what methods are employed to capture and store this data effectively?
2. Describe the difference between single linear regression and multiple linear regression in the context of predicting game outcomes. How might these techniques be applied to evaluate and rate sports teams?
3. How can data-driven methods be used to assess the financial impact of athletes and sports teams? Provide examples of metrics used in evaluating both individual player performance and team profitability

Employability for the Course / Programme

- **Sports Data analyst**
- **Research assistant**

Syllabus – Five-Year Integrated Master of Physical Education and Sports.**SEMESTER IX****KU9DSCPES504(P) – SPECIALIZATION (FOOTBALL)**

Semester	Course Type	Course Level	Course Code	Credits	Total Hours
7	DSC	400	KU9DSCPES504	4	105

Learning Approach (Hours/ Week)			Marks Distribution			Duration of ESE (Hours)
Lecture	Practical/ Internship	Tutorial	CE	ESE	Total	
15	90	105	50	50	100	30 minutes per student

Lecture/Tutorials, P/I=Practical/Internship, CE =Continuous Evaluation, ESE = End Semester Evaluation

Course Description

The course Practicum- Football Specialization is designed to provide an opportunity for the students to provide a comprehensive understanding of practical skills in football including techniques, tactics, fitness, and leadership. Through practical training sessions, students will develop their abilities as football players and potentially as coaches.

Course Outcomes: At the end of the course, the student will be able to-

CO No.	Expected outcomes	Learning Domains
CO1	Understand, analyze, and implement tactical principles and strategies	R,U,An,A
CO2	Understand the principles of team management and organization	U,An
CO3	Understand the techniques to assess opponents, identify strengths and weaknesses	U,A,An
CO4	Identify common football injuries, design and implement injury prevention program	E,C

***Remember (R), Understand (U), Apply (A), Analyse (An), Evaluate (E), Create**

Mapping of Course Outcomes to PSOs						
	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	✓		✓		✓	
CO2	✓	✓	✓	✓	✓	
CO3	✓		✓	C	✓	✓
CO4	✓	✓	✓		✓	✓

COURSE CONTENTS

Module 1: Introduction to football fundamentals

- 1.1 Introduction to football history, Basic rules and regulations, Introduction to coaching principles
- 1.2 Development and fitness(warm-up exercise and stretching routines, Fitness training, strength and conditioning)
- 1.3 Basic dribbling and ball control technique, Proper passing techniques, receiving ball under pressure
- 1.4 Shooting techniques and finishing drills , Advanced goalkeeping drills

Suggested Reading specific to module

- 1.1 Ditmer ,Warner Krutsch - *Football Fitness Training: A Scientific Approach*
- 1.2 Greg Gatz - *Complete Conditioning for Soccer*
- 1.3 American Football Coaches Association – *The Football Coaching Bible*
- 1.4 Hand book- FIFA, *The Law of the Game*

Module 2: Offensive and Defensive Principles

- 2.1 Principles of offending and principles of defending
- 2.2 1v1, 2v2, 3v2, 3v3 attacking, 1v1, 2v2, 3v3 defending
- 2.3 Goal scoring drills
- 2.4 Tactical analysis and strategy of offensive and defensive, set pieces and tactical skill

Suggested Reading specific to module

- 2.2 Rick Trickett- *Complete Offensive line*
- 2.3 Buxton, Drewitt, Jim (2009)- *Football Skill*
- 2.4 Paul Mccord – *101 special Teams Drills*
- 2.5 Lal D. C (2007) – *Skill and Tactics football*

Module 3: Tactical Understanding

- 3.1 Introduction to tactical formations (4-4-2, 4-3-3, 3-5-2 etc)
- 3.2 Advanced coaching techniques, Offensive and defensive strategies
- 3.3 Tackling techniques and drills, importance of team work in football
- 3.4 Team building exercise and group activities, Match preparation and game analysis

Suggested Reading specific to module

- 3.1 Mark A. Schuster –Coaching the Defensive Secondary
- 3.2 Jerry Tolley, Mack Brown – The Complete Book of Defensive Football Drills
- 3.3 Trimble, Allan (2000) – Coaching Football Successfully
- 3.4 Buxton, Drewitt, Jim (2009)- Football Skill

Module 4: Management and injury prevention strategies

- 4.1 Roles and responsibilities of football managers and coaches
- 4.2 Sports management in football, Marketing and branding
- 4.3 Match Officiating
- 4.4 Injury prevention and rehabilitation, Post-match recovery ,Nutrition, Hydration, sleep

Suggested Reading specific to module

- 4.1 Luxbacher ,Joe – Chuck Myers, Mike Leach – *The Complete Handbok of Coaching Wide Receivers*
- 4.2 Utpal Ganguli- *Coaching youth football: A comprehensive guide for Coaches of 6-11 year olds*
- 4.3 Mcavoy, Nelson (1998) -*Teaching Soccer Fundamentals*
- 4.4 Drew Tallman- *Football Coach’s Guide to A high Scoring Passing Offense*
- 4.5 Jerry Tolley, Mack Brown – *The Complete Book of Defensive Football Drills*

Core Compulsory Readings

- Ditmer ,Warner Krutsch () ,Football Fitness Training: A Scientific Approach
- Utpal Ganguli-() Coaching youth football: A comprehensive guide for coaches of 6-11 year olds
- Mcavoy, Nelson (1998) -Teaching soccer fundamentals
- Greg Gatz .() Complete Conditioning for Soccer
- Lal D. C (2007) – Skill and Tactics football
- Drew Tallman- Football Coach’s Guide to A high Scoring Passing Offense
- Jerry Tolley, Mack Brown – The Complete Book of Defensive Football Drills

TEACHING LEARNING STRATEGIES

- The content will be taught by using demonstration, explanation, presentation methods, videos, learning by doing, Whole part whole method Drills.

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MODE OF TRANSACTION

- Practice of Techniques/ learning by doing/ Individual Practice etc.

ASSESSMENT RUBRICS

Evaluation Type		Marks
End Semester Evaluation		25
a)	Skill proficiency	15
b)	Record file	5
c)	Viva	5
Continuous Evaluation		25
a)	Skill proficiency	15
b)	Record file/Field Visit/Project Report	5
c)	Viva	5
Total		50

SEMESTER IX

KU9DSCPES504 (P)–SPECIALIZATION (SWIMMING)

Semester	Course Type	Course Level	Course Code	Credits	Total Hours
7	DSC	400	KU9DSCPES504	4	105

Learning Approach (Hours/ Week)			Marks Distribution			Duration of ESE (Hours)
Lecture	Practical/ Internship	Tutorial	CE	ESE	Total	
15	90	105	50	50	100	30 minutes per student

Lecture/Tutorials, P/I=Practical/Internship, CE =Continuous Evaluation, ESE = End Semester Evaluation

Course Description

This course is designed to learn basic stroke and its drills, skill refinement techniques, different breathing techniques, and teaching lessons. The course will include theoretical and practical components, emphasizing skill acquisition and confidence-building in the water.

Course Pre- requisite: Those who have completed the basic swimming course

Course Outcome

Course Outcomes: At the end of the course, the student will be able to-

CO No.	Expected outcome	Learning Domains
CO1	Learn basic stroke and its drills	✓
CO2	Understand the progressive training methods in swimming	✓
CO3	Increase their efficiency in swimming	✓
CO4	learn the proper teaching methods for swimming	✓

***Remember (R), Understand (U), Apply (A), Analyse (An), Evaluate (E), Create (C)**

Mapping of Course Outcomes to PSOs

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1				✓		
CO2	✓	✓		✓		
CO3	✓	✓		✓		
CO4		✓	✓	✓	✓	

COURSE CONTENTS

Module 1: Basic stroke and its drills

Hours of transaction:25

- 1.1 Freestyle and backstroke (Drills:- Catch-Up Drill, Backstroke Arms with Flutter Kick)
- 1.2 Breaststroke and Butterfly (Drills:- Breaststroke Kick on Back, Drill: Dolphin Kick with Fins)
- 1.3 Flip Turns (Drill: Flip Turn Progression Drill)
- 1.4 Open Turns (Drill: Open Turn Drill)

Suggested Reading specific to the module

- 1.1 Mark Young (2014). *The Swimming Strokes Book. Easy exercises for learning how to swim the four basic swimming strokes. Educate and Learn Publishing*
- 1.2 Sheila Taormina (2014). *Swim Speed Strokes for Swimmers and Tri athletes. Master Freestyle, Butterfly, Breaststroke and Backstroke for Your Fastest Swimming (Swim Speed Series):Velo Press Publisher*
- 1.3 Michael Brooks (2019). *Developing swimmers. Human Kinetics*
- 1.4 Cecil Colwin (2002) *Breakthrough Swimming. Human Kinetics*

Module 2: Skill refinement Techniques

Hours of transaction:25

- 2.1 Video Analysis, Feedback and Correction
- 2.2 Progressive Training, Visualization,
- 2.3 Dryland Training, Biomechanical Analysis
- 2.4 Peer Learning, Consistent Practice and Goal Setting

Suggested Reading specific to the module

- 2.1 [Alan Lynn](#) (2014). *Swimming Technique, Training, Competition Strategy. Crowood Press Publisher*

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2.2 [Joe Friel](#) (2024). *The Triathlete's Training Bible. The World's Most Comprehensive Training Guide, 5th Edition.* [VeloPress](#) Publisher

2.3 [Paul Newsome](#), [Adam Young](#) (2012) *Swim Smooth the Complete Coaching System for Swimmers and Triathletes.* [Wiley](#) Publisher

2.4 [Scott Bay](#) (2016). *Swimming Steps to Success.* [Human Kinetics](#)

Module 3: Breathing techniques in swimming

Hours of transaction:30

3.1 Bilateral Breathing

3.2 Rhythmic Breathing

3.3 Breathing from the Side

3.4 Exhalation Underwater and Quick Inhalation

Suggested Reading specific to the module

3.1 [Charles Rob Orr](#), [Jane B. Tyler](#), [Bill Gow](#), [Emmett Wilson](#) (1980). *Swimming Basics* [Prentice-Hall](#) Publisher

3.2 [Sam Humphries](#) (2022) *Be a Fish The swim coaching bible to teach you to swim like a pro via swimming training, swim drills, swimmers speed secret lessons, speed strokes for beginners, adults, teens, kids, girls & boys.* Ebook

3.3 [Michael Brooks](#) (2019). *Developing swimmers.* [Human Kinetics](#)

3.4 [Cecil Colwin](#) (2002) *Breakthrough Swimming.* [Human Kinetics](#)

Module 4: Teaching lessons

Hours of transaction:25

4.1 Warm-up Activities (Simple floating exercises, gentle kicking drills and arm movements) and Fundamental Skills (Floating, kicking, arm strokes, breathing techniques)

4.2 Main part (selected stroke practice)

4.3 Fun and Games (relay races, treasure hunts, or water polo)

4.4 Cool Down and Reflection (Easy Swimming, Floating Relaxation, Arm Stretches, leg stretch, Neck roll, Deep Breathing)

Suggested Reading specific to the module

4.1 [Mark Young](#) (2021). *101 Swimming Lesson Plans for Swimming Teachers.* [Educate and Learn Publishing](#)

4.2 [Maud Robertson Ramsay Nomiya](#) (2014). *You Can Swim, But Can You Teach It?* [Strategic Book Publishing](#)

4.3 [Jeffrey Napolski](#) (2018). *Teaching Swimming Fun and Effective Instruction.* [Independently Published](#)

4.4 [Monica Lepore](#), [Luis Columna](#), [Lauren Friedlander Litzner](#) (2015). *Assessments and Activities for Teaching Swimming.* [Human Kinetics](#)

Core Compulsory Readings

1. [Mark Young](#) (2014). *The Swimming Strokes Book. Easy exercises for learning how to swim the four basic swimming strokes.* [Educate and Learn Publishing](#)

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2. Sheila Taormina (2014). Swim Speed Strokes for Swimmers and Tri athletes. Master Freestyle, Butterfly, Breaststroke and Backstroke for Your Fastest Swimming (Swim Speed Series): Velo Press Publisher
3. Michael Brooks (2019). Developing swimmers. Human Kinetics
4. Cecil Colwin (2002) Breakthrough Swimming. Human Kinetics
5. [Scott Bay](#) (2016). Swimming Steps to Success. [Human Kinetics](#)

Core Suggested Readings

1. [Mark Young](#) (2021). 101 Swimming Lesson Plans for Swimming Teachers. [Educate and Learn Publishing](#)
2. [Paul Newsome](#), [Adam Young](#) (2012) Swim Smooth the Complete Coaching System for Swimmers and Triathletes. [Wiley](#) Publisher
3. "Swim Lessons: Teach Yourself to Swim" by Bill and Judy Brewster

TEACHING LEARNING STRATEGIES

- The content will be taught by using demonstration, explanation, presentation methods, videos, learning by doing, whole part whole method drills.

MODE OF TRANSACTION

- Practice of Techniques/ learning by doing/ Individual Practice etc.

ASSESSMENT RUBRICS

Evaluation Type		Marks
End Semester Evaluation		25
a)	Skill proficiency	15
b)	Record file	5
c)	Viva	5
Continuous Evaluation		25
a)	Skill proficiency	15
b)	Record file/Field Visit/Project Report	5
c)	Viva	5
Total		50

Sample Questions to test Outcomes.

1. What are the primary breathing techniques used in swimming?
2. How does bilateral breathing differ from unilateral breathing in swimming?
3. What are some common mistakes swimmers make when it comes to breathing?
4. What are the skill refinement techniques used to improve swimming efficiency?
5. How does focusing on body alignment contribute to skill refinement in swimming?
6. Can you explain the concept of "catch and pull" and its importance in stroke technique refinement?

Employability for the Course / Programme

- Swimming instructor
- Swimming coach

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SEMESTER IX

KU9DSCPE504 (P)–SPECIALIZATION (TRACK AND FIELD)

Semester	Course Type	Course Level	Course Code	Credits	Total Hours
7	DSC	400	KU9DSCPE504	4	105

Learning Approach (Hours/ Week)			Marks Distribution			Duration of ESE (Hours)
Lecture	Practical/ Internship	Tutorial	CE	ESE	Total	
15	90	105	50	50	100	30 minutes per student

Lecture/Tutorials, P/I=Practical/Internship, CE =Continuous Evaluation, ESE = End Semester Evaluation

Course Description

The course of Practicum- track, and field 400 level, is so designed to allow the students to specialize in track field events. The course will include theoretical and practical components, emphasizing combined events, skill refinement techniques in jumping events, skill refinement techniques in throwing events, and teaching lessons of all the events.

Course Pre- requisite: Those who have completed the basic Track and Field course

Course Outcomes: At the end of the course, the student will be able to

CO No.	Expected outcome	Learning Domains
CO1	Understand the historical evolution combined events	R,U
CO2	Understand the Skill refinement Techniques in a jumping event	U
CO3 m	Understand the Skill refinement Techniques in throwing events	U
CO4	learn the proper teaching methods for track and field events	An,A,

***Remember (R), Understand (U), Apply (A), Analyse (An), Evaluate (E), Create (C)**

Mapping of Course Outcomes to PSOs

	PSO1	PSO2	PSO3	PSO4	PSO5	PO6
CO1	✓					
CO2		✓				
CO3	✓	✓				
CO4	✓	✓		✓		

COURSE CONTENTS

Module 1: Combined Events

Hours of transaction:25

- 1.1 Historical evolution and significance
- 1.2 Multi event competition rules
- 1.3 Points awarded system
- 1.4 Periodization for combined events athletes

Suggested Reading specific to the module

- 1.1 American Sport Education Program (2008). *Coaching Youth Track and Field.* [Human Kinetics](#)
- 1.2 David Lease (1999). *Combined Events.* [UK Athletics](#) Publisher
- 1.3 Gerald A. Carr (1999). *Fundamentals of Track and Field.* [Human Kinetics](#)
- 1.4 Tudor O. Bompa, Carlo Buzzichelli (2015). *Periodization Training for Sports.* [Human Kinetics](#)

Module 2: Skill refinement Techniques in jumping event

Hours of transaction:25

- 2.1 Long Jump (Master the approach run, takeoff mechanics. polymeric exercises to improve explosive power and reactive strength, body position during flight, leg extension and control, analyzes of video footage to identify areas for improvement and refine technique)
- 2.2 Triple Jump (Master the approach run, takeoff mechanics. polymetric exercises to improve explosive power and reactive strength, body position during flight, leg extension and control, analyzes of video footage to identify areas for improvement and refine technique)
- 2.3 High Jump (Takeoff drill, vertical jump ability through strength training and polymetric exercises. bar clearance technique, arching over the bar and driving the legs up)
- 2.4 Pole Vault (Master the pole plant and swing technique, ensuring proper timing and control, upper body strength and core stability exercises and drills, runway approach and takeoff angles, bar clearance technique)

Suggested Reading specific to the module

- 2.1 Jim Santos, Ken Shannon (1989). *Track: The Field Events*. [Sports Illustrated Publisher](#)
- 2.2 USA Track & Field (2015) - *Track & Field Coaching Essentials – Human Kinetics*
- 2.3 Jay Silvester (2003). *Complete Book of Throws*
- 2.4 Michael J Pellet. *Track and Field Made Understandable: The Throwing Events: Practice Edition Paperback*

Module 3: Skill refinement Techniques in throwing event

Hours of transaction:25

- 3.1 Shot Put (proper grip and positioning of the shot put, Master the rotational or glide technique, the release, footwork and balance to maintain stability)
- 3.2 Discus Throw (grip and finger positioning on the discus, winding technique to generate torque and rotational momentum, transition from winding to the power position, the release, maintaining balance and the posture)
- 3.3 Javelin Throw (Master the grip and javelin positioning, approach run, crossover and block phases to transfer energy from the lower body to the javelin, the release, footwork and balance)
- 3.4. Hammer Throw (mastering the grip and winding technique, exercises for lower body strength and explosive power, the release, maintaining balance and the posture)

Suggested Reading specific to the module

- 3.1** USA Track & Field (2015) - *Track & Field Coaching Essentials – Human Kinetics*
- 3.2** Jay Silvester (2003)*Complete Book of Throws*
- 3.3** Michael J Pellet. *Track and Field Made Understandable: The Throwing Events: Practice Edition Paperback*
- 3.4** Jay Silvester (2003)*Complete Book of Throws*

Module 4: Teaching lessons

Hours of transaction:35

- 4.1 Warm-up activities (Start with a light jog around the track or designated area to increase heart rate and warm up muscles, dynamic stretching exercises targeting major muscle groups, joint mobility exercises to improve range of motion and flexibility)
- 4.5 Main part (skill instruction, demonstration and practice drills of the selected event)
- 4.6 Fun and games (mini-races or any fun game to apply newly learned skills)
- 4.4 Cool down and reflection (light jog or cool down walk to gradually lower heart rate and prevent muscle stiffness, static stretching exercises targeting major muscle groups)

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Suggested Reading specific to the module

- 4.1 [Joseph L. Rogers](#) (2000). USA Track & Field Coaching Manual. [Human Kinetics](#)
- 4.2 [Aeras Publishing, Carol Jahan](#) (2010). Physical Education Lesson Plans for Classroom Teachers-Grades 4-6. [Aeras Publishing](#)
- 4.3 [American Sport Education Program](#) (2008). Coaching Youth Track and Field. [Human Kinetics](#)
- 4.4 [Gerald A. Carr](#) (1999). Fundamentals of Track and Field. [Human Kinetics](#)

Core Compulsory Readings

1. [Joseph L. Rogers](#) (2000). USA Track & Field Coaching Manual. [Human Kinetics](#)
2. [Kevin Morgan](#) (2013). Athletics Challenges. A Resource Pack for Teaching Athletics. [Taylor & Francis](#)
3. [Vern Gambetta](#) (1981). Track and Field Coaching Manual. Coaching Techniques and Guidelines Formulated by the Athletics Congress' Olympic Development Committee. [Leisure Press](#) publishes
4. [Emily Schlesinger](#) (2024). Track and Field. [Saddleback Educational Publishing](#)
5. [Tudor O. Bompas, G. Gregory Haff](#) (2018). Periodization. Theory and Methodology of Training. [Human Kinetics](#)
6. USA Track & Field (2015) - Track & Field Coaching Essentials – Human Kinetics

Core Suggested Readings

1. [Vanaik A.](#) (2017). Officiating and Coaching, Friends Publication. New Delhi.
2. [Renwick GR](#) (2001). Play Better Athletics. Sports Pub, Delhi.
3. [Nick Newman](#) (2012). The Horizontal Jumps. Planning for Long Term Development. [CreateSpace Independent Publishing Platform](#)
4. [Gupta R.](#) (2004). Layout & Marking of Track & Field. Friends Publications. India. New Delhi.
5. Handbook-Rules and Regulation. International Athletic Federation (2010).
6. [Eugene Shane Lee, Jeremiah Whitefield](#) (2010) - Fundamentals of Sprinting – A guide for Sprinters – Xlibris U S
7. [Graeme Foreman, Andy Bradshaw](#) (2009) - An Introduction to Fundamentals of Movement – Coachwise

TEACHING LEARNING STRATEGIES

- The content will be taught by using demonstration, explanation, presentation methods, videos, learning by doing, Whole part whole method Drills.

MODE OF TRANSACTION

- Practice of Techniques/ learning by doing/ Individual Practice etc.

ASSESSMENT RUBRICS

Evaluation Type		Marks
End Semester Evaluation		25
a)	Skill proficiency	15
b)	Record file	5
c)	Viva	5
Continuous Evaluation		25
a)	Skill proficiency	15
b)	Record file/Field Visit/Project Report	5
c)	Viva	5
Total		50

Sample Questions to test Outcomes.

1. What are the eligibility requirements for athletes to participate in combined events competitions at the international level?
2. Can athletes compete in both heptathlon and decathlon events within the same championship or competition?
3. What is the purpose of creating a lesson plan?
4. How does an athlete generate power and velocity in throwing events such as shot put or javelin?

Employability for the Course / Programme

- **Athlete trainer**
- **Sports trainer**
- **Athletics coach**

SEMESTER IX**KU9DSSPES501: PSYCHOLOGICAL SKILLS TRAINING**

Semester	Course Type	Course Level	Course Code	Credits	Total Hours
9	DSC	500	KU9DSSPES501	4	90

Learning Approach (Hours/ Week)			Marks Distribution			Duration of ESE (Hours)
Lecture	Practical/ Internship	Tutorial	CE	ESE	Total	
30	60	90	50	50	100	2hrs

Lecture/Tutorials, P/I=Practical/Internship, CE =Continuous Evaluation, ESE = End Semester Evaluation

Course Description

This course provides theoretical and practical knowledge and skills essential for understanding of imparting psychological training for sportspersons. The course aims to define psychological skills training in sports uncovering the myths surrounding it. The course aims to present the models, methods and diagnostic tolls for measuring psychological traits and providing intervention strategies. The course will also provide opportunities for gaining experience to carry out measurement and interpretation of data and try out and equip themselves for planning and scheduling psychological skills training for athletes.

Course Outcomes: At the end of the course, the student will be able to

CO No.	Expected outcome	Learning Domains
CO1	To understand the concept of psychological skills training in sports	R,U
CO2	Demonstrate an understanding of theory behind psychological skills training.	R,U, A
CO3	Demonstrate an understanding of the relationship between psychological processes and sporting performance.	R, U,A
CO4	Demonstrate proficiency in assessing, monitoring, and preparing PST for different sportspersons	A, AN,E
CO5	To gain practical experience of working with athletes in training and competitive settings.	A, An, E,C

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***Remember (R), Understand (U), Apply (A), Analyse (An), Evaluate (E), Create (C)**

Mapping of Course Outcomes to PSOs

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1		✓	✓		✓	✓
CO2		✓	✓		✓	✓
CO3	✓	✓	✓			✓
CO4		✓	✓		✓	✓
CO5	✓	✓	✓		✓	✓

Module 1 : Introduction to PST

Hours of transaction:10

1.1 Understanding Psychological Skills Training

- Definition and Importance of PST
- Myths about PST
- PST effectiveness
- Phases of PST

1.2 Basic Psychological Skills for Sports Performance

- Goal Setting
- Relaxation
- Self-Talk
- Imagery and Mental Rehearsal

1.3 Psychological Skills and Implications

- Implication for Research
- Implications for Practice

1.4 Mental Toughness

- Definition, meaning and concepts.
- Awareness and use of 4 Cs of Mental Toughness.

Suggested readings specific to the Module

1.1 Hardy Lew; Jones Graham and Gould Daneil (2001) *Understanding Psychological preparation for Sport*. John Wiley and Sons. Chichester, England
Gucciardi, D., & Gordon, S. (2011). *Mental Toughness in Sport: Developments in Theory and Research*.

1.2 Cox, R. H. (2002). *Sport Psychology: Concepts and Applications*. U.S.A.:

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McGrawHill.

Galluci, N.T. (2008). *Sports Psychology*. New York: The Psychology Press.

1.3 Lavalke, D., Krener, J., Moran, A.P., & Williams, M. (1994). *Sports Psychology: Contemporary Themes*. London: Red Globe Press.

1.4 Mohan, J. (2010). *Sports Psychology: Emerging Horizons*. New Delhi: FriendsPublishers.

Singer, R.N., Hausenblas, H.A., & Janelle, C.M. (2001). *Handbook of Sport Psychology (2nd edition)*. John Wiley & sons: USA.

Module 2: Advanced Psychological Skills : Self-Confidence and Motivation Hours of transaction:25

2.1 Introduction and Theoretical aspects of self confidence

- Self-Efficacy
- Sport Confidence
- Collective Efficacy
- Anxiety

2.2 Self-confidence, Self-efficacy and Sports Performance

- Self-confidence and Sports performance
- Self-efficacy and sports performance
- Collective efficacy and sports performance
- Self-confidence, self-efficacy and anxiety

2.3 Motivation

- Introduction – Intrinsic and Extrinsic Motivation
- Cognitive Evaluation Theory
- Goal Orientations
- Attributions – Consequences and antecedents
- Overtraining, Burnout and Withdrawal from Sport

2.4 Motivation

- Assessment Tests for Self-confidence and Motivation
- Strategies for Improving Self-confidence and Enhancing Motivation
- Implications for Research and Best Practice

Suggested readings specific to the Module

2.1 Vealey, R. S., & Chase, M. A. (2008). *Self-confidence in sport*. In T. S. Horn (Ed.), *Advances in sport psychology (pp. 68–97,430–435)*. Human Kinetics

2.2 Feltz, D. L. (2007). *Self-confidence and sports performance*. In D. Smith & M. Bar-Eli (Eds.), *Essential readings in sport and exercise psychology (pp. 278–294)*. Human Kinetics.

Feltz, D L, Short, Sandra E. Sullivan, Philip Joseph. (2008) *Self-Efficacy in Sport*. Human Kinetics.

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2.3 Orlick, Terry. (2008) *In Pursuit of Excellence. Human Kinetics.*

Anastasi, A., & Urbina, S. (1997). *Psychological Testing. USA: Prentice Hall.*

2.4 Postman, L.F. & Fagan, J. P. (1949). *Experimental Psychology. An introduction*. New York: Harper and Brother Publishers.

2.5 Woodworth, R.S., & Schlosberg, H. (1965). *Experimental Psychology. New York: Methen and Co. Ltd.*

Module 3: Advanced Psychological Skills: Arousal and Activation; Concentration and Attentional Control; Stress and Anxiety; Coping with Adversity Hours of transaction: 25

3.1 Arousal and Activation

- Theories of Arousal and Activation
- Strategies influencing arousal and activation
- Mental Preparation strategies; Pre-performance routines
- Implications for research and best practice.

3.2 Concentration and Attention Control

- Theoretical Aspects of attention and concentration.
- Focused versus divided attention
- Strategies for enhancing attention and concentration.
- Implications for research and best practice

3.3 Stress and Anxiety

- Concept of anxiety – multidimensional trait and anxiety
- Antecedents of Stress and Anxiety
- Competitive state anxiety and performance
- Factors affecting anxiety responses – Strategies
- Implications for research and best practice.

3.4 Coping with Adversity

- Coping – understanding, coping research and theory.
- Coping efforts and outcomes
- Stress appraisal and model of coping
- Implications for research and best practice.

Suggested readings specific to the Module

3.1 Weinberg, R. S. & Gould, D. (2007). *Foundations of Sport and Exercise Psychology. U.S.A.: Human Kinetics.*

3.2 Gucciardi, D., & Gordon, S. (2011). *Mental Toughness in Sport: Developments in Theory and Research.*

3.3 Cox, R. H. (2002). *Sport Psychology: Concepts and Applications. U.S.A.: McGrawHill.*

3.4 Galluci, N.T. (2008). *Sports Psychology. New York: The Psychology Press.*

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3.5 Tenenbaum, G., & Eklund, R.C. (2007). *Handbook of Sports Psychology* (3rd edition). John Wiley & sons: USA.

3.6 Stewart, J. H., Biddle, A., & Nanette, M. (2008). *Psychology of Physical Activity*. London: Routledge.

Thelma, S. H. (1992). *Advances in Sports Psychology*. Illinois: Human Kinetics.

Module 4: Applying PST – Models, Strategies and Applications.

Hours of

transaction:15

4.1 Applying Psychological Skills Training

- Model for Psychological preparation for peak performance
- Psychological Skills and Strategies for peak performance.
- Mental Imagery – Perspectives and Approaches

4.2 Implication of PST in practice

- Preparation for peak performance – guidelines
- Developing psychological skills training programme
- Sports Psychology consultancy in practice – effectiveness and reflection

Suggested readings specific to the Module

4.1 Hardy Lew; Jones Graham and Gould Daneil (2001) *Understanding Psychological preparation for Sport*. John Wiley and Sons. Chichester, England

4.2 Morris, Tonny; Spittle Michael and Watt, Antony P (2005). *Imagery in Sport*. Human Kinetics.

4.3 Gucciardi, D., & Gordon, S. (2011). *Mental Toughness in Sport: Developments in Theory and Research*.

4.4 Cox, R. H. (2002). *Sport Psychology: Concepts and Applications*. U.S.A.: McGrawHill.

Module 5 : Teacher Specific Module

Hours of transaction:10

- The respective teacher will prepare the module content, flexibly designing the material according to feasibility, prior modules, and pertinent information

Core Compulsory readings

- Hardy Lew; Jones Graham and Gould Daneil (2001) *Understanding Psychological preparation for Sport*. John Wiley and Sons. Chichester, England
- Gucciardi, D., & Gordon, S. (2011). *Mental Toughness in Sport: Developments in Theory and Research*.
- Cox, R. H. (2002). *Sport Psychology: Concepts and Applications*. U.S.A.: McGrawHill.
- Cox, R. H. (2002). *Sport Psychology: Concepts and Applications*. U.S.A.: McGrawHill.
- Galluci, N.T. (2008). *Sports Psychology*. New York: The Psychology Press.
- Lavalke, D., Krener, J., Moran, A.P., & Williams, M. (1994). *Sports Psychology*:

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Contemporary Themes. London: Red Globe Press.

- Singer, R.N., Hausenblas, H.A., & Janelle, C.M. (2001). Handbook of Sport Psychology (2nd edition). John Wiley & sons: USA.

Core suggested readings

- Morris, Tonny; Spittle Michael and Watt, Antony P (2005). Imagery in Sport. Human Kinetics.
- Galluci, N.T. (2008). Sports Psychology. New York: The Psychology Press.
- Tenenbaum, G., & Eklund, R.C. (2007). Handbook of Sports Psychology (3rd edition). John Wiley & sons: USA.
- Stewart, J. H., Biddle, A., & Nanette, M. (2008). Psychology of Physical Activity. London: Routledge.

LIST OF PRACTICUMS

- Assessment of Psychological Skills among athletes of diverse sports groups
- Preparation of Psychological Skills Training Schedule
- Working with athletes and teams –PST consultancy and reflection

TEACHING LEARNING STRATEGIES

The subject will be taught by using lectures, demonstrations, seminars, classroom discussion, charts, and presentation methods.

MODE OF TRANSACTION

Lecture//Laboratory Work/Field Work/ Outreach Activities/Project Work/ Vocational Training/Viva/ Seminars/ Term Papers/Assignments/ Presentations/ Self-Study etc.

ASSESSMENT RUBRICS

Evaluation Type		Marks
End Semester Evaluation		50
Continuous Evaluation		50
a)	Test Paper – 1 (Written/Oral)	10
b)	Test Paper – 2 (Written/Oral)	10
c)	Assignment Seminar Record Viva-Voce Any other relevant mode of evaluation	(Any three - each for 10 marks) 10 X 3 = 30 Marks
Total		100

Sample Questions to test Outcomes.

- Define Psychological Skills Training (PST) and briefly explain its importance in sports performance.
- Assessment Tests for Self-confidence and Motivation
- Discuss the psychological preparation for high performance

SEMESTER IX

**KU9RPHPES501: DISSERTATION
(40 Credits of Honours with research)**

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SEMESTER X

KU10DSCPES505: BIOMECHANICAL ANALYSIS IN SPORTS

Semester	Course Type	Course Level	Course Code	Credits	Total Hours
10	DSC	500	KU10DSCPES505	4	60

Learning Approach (Hours/ Week)			Marks Distribution			Duration of ESE (Hours)
Lecture	Practical/ Internship	Tutorial	CE	ESE	Total	
60	-	60	50	50	100	2 hrs

Lecture/Tutorials, P/I=Practical/Internship, CE =Continuous Evaluation, ESE = End Semester Evaluation

Course Description

This course delves into advanced concepts in biomechanics, focusing on their application in analyzing sports performance and injury prevention. Students will explore advanced kinematics and kinetics, including the analysis of linear and angular motion, kinematic variables measurement techniques, and the principles of projectile motion. Additionally, students will study friction, impact, and elasticity in sports interactions, as well as posture and movement analysis, joint kinematics, and qualitative and quantitative analysis techniques. The course also covers biomechanical aspects of work, energy, injury mechanisms, aging, special populations, and emerging trends in biomechanics research.

Course Outcomes: At the end of the course, the student will be able to

CO No.	Expected outcome	Learning Domains
CO1	Analyse linear and angular motion in sports performance and apply kinematic principles to enhance skill analysis and performance.	An, E
CO2	Evaluate factors influencing frictional forces in sports interactions and analyze impact forces for injury prevention.	E, An
CO3	Analyse posture and movement in sports performance, identify common postural deformities and prescribe corrective exercises.	A, An, E
CO4	Interpret joint kinematics in sports and rehabilitation contexts and apply qualitative and quantitative analysis techniques for biomechanical assessment	A, AN,E,C

***Remember (R), Understand (U), Apply (A), Analyse (An), Evaluate (E), Create (C)**

Mapping of Course Outcomes to PSOs						
	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1		✓		✓		
CO2		✓	✓			
CO3				✓		
CO4		✓	✓	✓	✓	✓

COURSE CONTENTS

Module: 1 Advanced Biomechanical Concepts

Hours of transaction: 10

1.1 Analysis of linear and angular motion in sports performance

- Application of kinematic principles in sports skill analysis and performance enhancement
- Kinematic variables and their measurement techniques
- Analysis of Linear and Angular Motion in Sports

1.2 Principles of Projectile Motion in Sports

1.3 Application in Throwing, Kicking, and Shooting

1.4 Analysis of Factors Affecting Projectile Motion in Different Environments

Suggested readings specific to the module.

1.1 McGinnis, P. (2013). *Biomechanics of sport and exercise*. Champaign, IL: Human Kinetics

1.2 Blazevich, A. (2007). *Sports biomechanics*. London: A. & C. Black.

1.3 Bartlett, R. (2007). *Introduction to sports biomechanics*. London: Routledge, Taylor & Francis Group.

1.4 Duane Knudson (2021). *Fundamentals of Biomechanics*. Springer International Publishing

Module 2: Applied Biomechanics in Sports

Hours of transaction: 15

2.1 Forces, Friction, Impact, and Elasticity

- Factors Influencing Frictional Forces in Sports
- Analysis of Impact Forces and Injury Prevention
- Role of Elasticity in Sports Equipment Design

2.2 Biomechanics of Sport Performance

- Analysis of Techniques and Performance Optimization
- Factors Affecting Athletic Performance

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- Application of Biomechanical Principles in Training

Suggested readings specific to the module.

- 2.1 McGinnis, P. (2013). *Biomechanics of sport and exercise*. Champaign, IL: Human Kinetics.
- 2.2 Jason Zimba (2009) - *Force and Motion – John Hopkins University Press*
- 2.3 Susan L. Roberts & Sharon A. Falkenburg (2010) - *Biomechanics – Mosby Year Book*
- 2.4 Duane Knudson (2021). *Fundamentals of Biomechanics*. Springer International Publishing

Module 3: Biomechanical Analysis and Techniques Hours of transaction: 15

- 3.1 Posture and Movement Analysis
 - Importance of Posture in Performance and Injury Prevention
 - Common Postural Deformities and Corrective Exercises
- 3.2 Joint Kinematics and Gait Analysis
 - Biomechanical Interpretation of Gait
- 3.3 Analysis Techniques for Movement Patterns
- 3.4 Video Analysis in Biomechanical Assessment

Suggested readings specific to the module.

- 3.1 Nicholas Stergiou (2020) - *Biomechanics and Gait analysis – Elsevier Science*
- 3.2 Andrew Olesnick, Neville Lawrence (2003) *Physics – Projectile Motion – Greg Eather*
- 3.3 Micheal Aloysius MacConaill, John V. Basmajian (1977) - *Muscles and Movements – A Basis for Human Kinesiology – R. E. Krieger Publishing Company*
- 3.4 Carl Payton, Roger Bartlett (2017). *Sport and Exercise The British Association of Sport and Exercise Sciences Guide*

Module 4: Advanced Applications and Emerging Trends

Hours of transaction: 15

- 4.1 Mechanical Work, Energy, and Efficiency
 - Work-Energy Theorem and its Application.
 - Energy Expenditure in Physical Activities
 - Efficiency and Economy in Movement
- 4.2 Biomechanics in Injury Prevention and Rehabilitation
 - Mechanisms of Injury and Risk Factors
 - Injury Prevention and Rehabilitation Strategies
- 4.3 Biomechanics in Aging, Special Populations, and Emerging Trends
 - Biomechanical Changes in Aging
 - Considerations for Special Populations

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4.4 Research Advancements and Emerging Technologies in Biomechanics

Suggested readings specific to the module.

- 4.1** Bunn, John W. *Scientific Principles of Coaching, Second Edition.* (Englewood cliffs, New Jersey : Prentice Hall, Inc. 1972)
- 4.2** Hall, Susan J. *Basic Biomechanics, Fourth Edition* (Boston etc.:WCB/MC Graw-Hill Companies, 2004)
- 4.3** Hay, James G. *The Biomechanics of Sports Techniques, Fourth Edition* (Englewood cliffs, New Jersey; Prentice Hall, 1993)
- 4.4** Hay, James G. and Raid J. Gavin, *Anatomy, Mechanics and Human motion, Second Edition* (Englewood cliffs, New Jersey: Prentice Hall, 1988).

Module 5: Teacher-Specific Module

Hours of transaction: 05

- Biomechanical analysis of video footage of sports performances
- Discussion on the current trends and emerging technologies in sports biomechanics
- Discussion on the ethical issues related to biomechanical research in sports, such as athlete consent, privacy, and data usage.

Core Compulsory Readings

- McGinnis, Peter M. *Biomechanics of Sport and Exercise, Second Edition* (Champaign:Human kinetics publishers, 2005)
- Dr. A.K. Uppal and Dr.Jogiswar Goswami (2020) - *Kinesiology and Biomechanics – Friends Publications* (India)
- Dr. Praveen Kumar (2021) - *Sports Biomechanics and Kinesiology – Friends Publications* (India)
- Donald. Neumann (2010) - *Kinesiology of the Musculoskeletal System – mosby/Elsevier*

Core Suggested Readings

- Marion Ruth Broar (2008) - *An Introduction to Kinesiology – The University of Michigan*

TEACHING LEARNING STRATEGIES

- The class will be taught by using lectures and demonstration, seminars, classroom discussion, videos, charts and presentations method.

MODE OF TRANSACTION

Lecture//Laboratory Work/ Field Work/ Outreach Activities/ Project Work/ Vocational Training/Viva/ Seminars/ Term Papers/Assignments/ Presentations/ Self-Study etc

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ASSESSMENT RUBRICS

Evaluation Type		Marks
End Semester Evaluation		50
Continuous Evaluation		50
a)	Test Paper – 1 (Written/Oral)	10
b)	Test Paper – 2 (Written/Oral)	10
c)	Assignment Seminar Record Viva-Voce Any other relevant mode of evaluation	(Any three - each for 10 marks) 10 X 3 = 30 Marks
Total		100

Sample Questions to test Outcomes.

1. How does the analysis of linear and angular motion contribute to understanding and enhancing sports performance? Provide examples from different sports.
2. Analyse the implications of impact forces in sports injury prevention. How can athletes mitigate the risk of injuries associated with impact forces during sports activities?
3. Analyse the biomechanics of common sports injuries and propose injury prevention strategies based on biomechanical principles.

SEMESTER X

KU10DSCPE506: SPORTS TECHNOLOGY

Semester	Course Type	Course Level	Course Code	Credits	Total Hours
10	DSC	500	KU10DSCPE506	4	60

Learning Approach (Hours/ Week)			Marks Distribution			Duration of ESE (Hours)
Lecture	Practical/ Internship	Tutorial	CE	ESE	Total	
60	-	60	50	50	100	2hrs

Lecture/Tutorials, P/I=Practical/Internship, CE =Continuous Evaluation, ESE = End Semester Evaluation

Course Description

Sports Technology is a multidisciplinary field that explores the intersection of sports and technology, focusing on the development, implementation, and impact of technological innovations in various aspects of sports performance, analysis, and management. This course provides students with a comprehensive understanding of the latest advancements in sports technology and their applications in enhancing athletic performance.

Course Outcomes: At the end of the course, the student will be able to

CO No.	Expected outcome	Learning Domains
CO1	Understand the technology involved in sports	R,U
CO2	Understand the importance of technology for the improvement of sports performance	R,U,A
CO3	Understand the latest advancements in the field of sports	R,U,A
CO4	Understand the process of equipment design, materials science, and sports apparel technology.	U,A, An, E

***Remember (R), Understand (U), Apply (A), Analyse (An), Evaluate (E), Create (C)**

Mapping of Course Outcomes to PSOs

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1			✓	✓		
CO2			✓			
CO3				✓		✓
CO4		✓	✓		✓	✓

COURSE CONTENTS

Module 1: Introduction of Sports Technology

Hours of transaction: 10

- 1.1 Meaning, definition, purpose, advantages and applications of Sports Technology
- 1.2 General Principles and purpose of instrumentation in sports
- 1.3 Enhancement: which technologies are improved and how
- 1.4 Technological impacts on sports and how it impacts the Peers.

Suggested Reading specific to the module

- 1.1 Chris Edmundson (2015). *Sports Technology. Optimizing Sports Performance. Bloomsbury Publishing Plc Publisher*
- 1.2 Geoff Thompson (2001). *Sports Technology. Nelson Thomson Learning Publisher*
- 1.3 Neil Duncanson (1992). *Sports Technology. Bookwright Press Publisher*
- 1.4 Vanessa Ratten (2019). *Sports Technology and Innovation. Assessing Cultural and Social Factors. Springer International Publishing*

Module 2: Science of Sports Materials

Hours of transaction: 15

- 2.1 Adhesives- Nano glue, Nano moulding technology, Nano turf.
- 2.2 Footwear production and its application in sports
- 2.3 Foams- Polyurethane, Polystyrene, Styrofoam, closed- cell and open-cell foams, Neoprene, Foam.
- 2.4 Smart Materials – Shape Memory Alloy (SMA), Thermo chromic film, High-density modelling foam. Peer design with smart materials in sports

Suggested Reading specific to module

- 2.1 Franz Konstantin Fuss, Aleksandar Subic, Rabindra Mehta, Martin Strangwood (2013). *Routledge Handbook of Sports Technology and Engineering. Taylor & Francis*
- 2.2 Charles J.A. Crane, F.A.A. & Furness, J.A.G. (1987). *Selection of Engineering*

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Materials. UK: Butterworth Heiremann.

2.3 Finn, R.A. & Trojan, P.K. (1999). *Engineering Materials and their Applications.*
UK: Jaico Publisher.

2.4 Anthony M. J. Bull, Peter R. N. Childs, Dominic Southgate (2016). *Sports Innovation, Technology and Research.* World Scientific Publishing Company

Module 3: The Integration of Technologies into Sports Hours of transaction: 15

3.1 Meaning and introduction of the integration of foreign technologies into sports practice

3.2 Use of computer and software in match analysis and coaching. Reflexion of various sports surface, technology and computer in sports.

3.3 GPS: How it enhances the modern sports

3.4 Technologies for judging, umpiring and refereeing (Hawk-Eye, IRS, DRA, VAR, GLT, IRCISO, ATS, EDM, Photo finish)

Suggested Reading specific to the module

3.1 Sascha L. Schmidt (2020). *21st Century Sports. How Technologies Will Change Sports in the Digital Age.* Springer International Publishing

3.2 Franz Konstantin Fuss, Sadayuki Ujihashi, Aleksandar Subic (2007). *The Impact of Technology on Sport II.* Taylor & Francis

3.3 Anthony M. J. Bull, Peter R. N. Childs, Dominic Southgate (2016). *Sports Innovation, Technology and Research.* World Scientific Publishing Company

3.4 T. V. V. L. N. Rao (2021). *Biotribology Emerging Technologies and Applications.* CRC Press

Module IV: Surfaces of Playfields and Modern Equipment

Hours of transaction: 15

4.1 Modern surfaces for playfields, construction and installation of sports surfaces. (synthetic, wood, polyurethane)

4.2 Artificial turf and Modern technology in the construction of indoor and outdoor facilities.

4.3 Technology in manufacture of modern play equipment. Types, Materials and Advantages. (Balls, Bat/Stick/ Racquets, Clothing and shoes), Measuring equipments

4.4 Protective equipment: Types, Materials and Advantages. Sports equipment with Nano technology, Advantages. Reflexion of materials and advantages in playing with productive equipment in sports and games.

Suggested Reading specific to the module

4.1 Franz Konstantin Fuss, Aleksandar Subic, Rabindra Mehta, Martin Strangwood (2013). *Routledge Handbook of Sports Technology and Engineering.* Taylor & Francis

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4.2 Stewart Ross (2010). *Sports Technology*. EvansPublisher

4.3 Kerr, R. (2016). *Sport and Technology*. Manchester M1 7JA: Manchester University press

4.4 John Mongilo. (2001). *Nano Technology 101*. New York: Green wood publishing group.

Module 5: Teacher Specific Module

Hours of transaction: 10

- The respective teacher will prepare the module content, allowing for adaptability in designing the material according to feasibility, prior modules, and pertinent information.

Core Compulsory Readings

1. Chris Edmundson (2015). *Sports Technology. Optimizing Sports Performance*. Bloomsbury Publishing Plc Publisher
2. Geoff Thompson (2001). *Sports Technology*. Nelson Thomson Learning Publisher
3. Vanessa Ratten (2019). *Sports Technology and Innovation. Assessing Cultural and Social Factors*. Springer International Publishing
4. Franz Konstantin Fuss, Aleksandar Subic, Rabindra Mehta, Martin Strangwood (2013). *Routledge Handbook of Sports Technology and Engineering*. Taylor & Francis
5. Stewart Ross (2010). *Sports Technology*. EvansPublisher
6. Sascha L. Schmidt (2020). *21st Century Sports. How Technologies Will Change Sports in the Digital Age*. Springer International Publishing
7. Franz Konstantin Fuss, Sadayuki Ujihashi, Aleksandar Subic (2007). *The Impact of Technology on Sport II*. Taylor & Francis
8. Anthony M. J. Bull, Peter R. N. Childs, Dominic Southgate (2016). *Sports Innovation, Technology and Research*. World Scientific Publishing Company
9. Neil Duncanson (1992). *Sports Technology*. Bookwright Press Publisher

Core suggested Reading

1. Steve Haake (2018). *AdvantagePlay. Technologies that Changed Sporting History*. Arena Sport Publisher
2. Kerr, R. (2016). *Sport and Technology*. Manchester M1 7JA: Manchester University press
3. Kochar, S.K. (1982). *Methods and Techniques of Teaching*. (New Delhi, Jullandhar, Sterling Publishers Pvt. Ltd.)
4. Walia, J.S. (1999). *Principles and Methods of Education*. (Paul Publishers, Jallandhar)

TEACHING LEARNING STRATEGIES

- The class will be taught by using lectures and demonstration, seminars,

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classroom discussion, videos, charts and presentations method.

MODE OF TRANSACTION

- Lecture//Laboratory Work/ Field Work/ Outreach Activities/ Project Work/ Vocational Training/Viva/ Seminars/ Term Papers/Assignments/ Presentations/ Self-Study etc.,

ASSESSMENT RUBRICS

Evaluation Type		Marks
End Semester Evaluation		50
Continuous Evaluation		50
a)	Test Paper – 1 (Written/Oral)	10
b)	Test Paper – 2 (Written/Oral)	10
c)	Assignment Seminar Record Viva-Voce Any other relevant mode of evaluation	(Any three - each for 10 marks) 10 X 3 = 30 Marks
Total		100

Sample Questions to test Outcomes.

1. What are some key advancements in sports equipment technology that have improved athlete performance?
2. How has the use of GPS tracking devices revolutionized coaching and training methods in team sports?
3. Explain the concept of "smart stadiums" and how they enhance the fan experience.
4. What are some ethical considerations surrounding the use of performance-enhancing technology in sports?

SEMESTER X

KU10DSCPES507: PERFORMANCE ANALYSIS

Semester	Course Type	Course Level	Course Code	Credits	Total Hours
10	DSC	500	KU10DSCPES507	4	75

Learning Approach (Hours/ Week)			Marks Distribution			Duration of ESE (Hours)
Lecture	Practical/ Internship	Tutorial	CE	ESE	Total	
45	30	75	50	50	100	2 hrs

Lecture/Tutorials, P/I=Practical/Internship, CE =Continuous Evaluation, ESE = End Semester Evaluation

Course Description

Demonstrate understanding of theoretical and practical approaches to performance analysis and implement this knowledge into individual or team-centred practice. Demonstrate understanding and practical skills relating to the application of technological approaches to performance assessment and convey this information to athletes and other practitioners. Demonstrate ability to select and implement appropriate performance analysis techniques and demonstrate a critical awareness of the limitations of these approaches.

Course Outcomes: At the end of the course, the student will be able to

CO No.	Expected outcome	Learning Domains
CO1	Demonstrate advanced knowledge of performance analysis concepts applied in team and/or individual sports.	R, U
CO2	Design, implement and evaluate performance analysis framework(s) and technologies for sport performance monitoring and reporting to a range of stakeholders.	U, A, An
CO3	Critically assess areas of sport performance and adequately select appropriate key performance indicators to monitor individual or team performance.	A, An, E
CO4	Analyse, present and interpret physical, technical, and/or tactical	A, An, C

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	data for individual and/or team sport performance	
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***Remember (R), Understand (U), Apply (A), Analyse (An), Evaluate (E), Create (C)**

Mapping of Course Outcomes to PSOs

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1		✓				
CO2			✓	✓	✓	✓
CO3		✓	✓		✓	✓
CO4			✓		✓	✓

COURSE CONTENTS

Module: 1 Understand performance profiling

Hours of transaction: 15

1.1 Performance Profiling Overview

- Objectives of performance profiling (to identify weakness, to help in planning appropriate interventions, to maximize performance, to support motivation and adherence, to monitor progress),
- Importance of performance profiling in sports
- Maximizing performance and supporting motivation

1.2 The Performance Profiling Process

- Steps involved in performance profiling.
- Different methods of recording performance profiling results (spider diagram, pie chart, bar graph, table)

1.3 Methods of Recording Performance Profiling Results

- Spider diagram, pie chart, bar graph, table

1.4 Improving Focus Areas Identified by Performance Profiling

- Gap analysis, action planning, target setting, SMART targets

Suggested readings specific to the module.

1. O'Donoghue, P. (2014). *An introduction to performance analysis of sport.* Routledge.
2. Hughes, M., & Bartlett, R. (2002). *The use of performance indicators in performance analysis.* *Journal of Sports Sciences*, 20(10), 739-754.
3. O'Donoghue, P. (2010). *Research methods for sports performance analysis.* Routledge.
4. McGarry, T., & Franks, I. (2000). *Contextual factors in performance analysis.* *International Journal of Performance Analysis in Sport*, 1(2), 67-78.

Module 2: Conducting Performance Profiling

Hours of Transaction: 15

2.1 Personal Performance Profiling Exercise

- Selecting a sport for profiling
- Identifying characteristics of successful performers
- Rating characteristics in terms of importance for success

2.2 Performance Profiling for Others

- Rating level of achievement for identified characteristics.
- Providing feedback and recommendations

2.3 Displaying Performance Profiling Results

- Using various visualization methods

2.4 Planning for Improvement

- Identifying and addressing weaker areas
- Setting actionable goals using SMART criteria

Suggested readings specific to the module.

1. O'Donoghue, P. (2014). *An introduction to performance analysis of sport.* Routledge.
2. Hughes, M., & Bartlett, R. (2002). *The use of performance indicators in performance analysis.* *Journal of Sports Sciences*
3. O'Donoghue, P. (2010). *Research methods for sports performance analysis.* Routledge.
4. McGarry, T., & Franks, I. (2000). *Contextual factors in performance analysis.* *International Journal of Performance Analysis in Sport*

Module 3: Performance Analysis Techniques

Hours of transaction:20

3.1 Understanding Analysis of Performance

- Importance of performance analysis in improvement

3.2 Methods of Performance Analysis

- Techniques for analysing sports performance.

3.3 Selecting Appropriate Analysis Methods

- Matching methods to different sports and situations

3.4 Analysing Different Types of Sports Performance

- Individual and team performance analysis

Suggested readings specific to the module.

1. McGarry, T. (2009). *Applied and theoretical perspectives of performance analysis in sport: Scientific issues and challenges.* *International Journal of Performance Analysis in Sport*
2. Carling, C. (2013). *Interpreting physical performance in professional soccer match-play: Should we be more pragmatic in our approach?* *Sports Medicine*, 43(8), 655-663.

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3. O'Donoghue, P. (2007). *Statistics for sport and exercise studies: An introduction*. Routledge.
4. McGarry, T., & Franks, I. (2000). *Contextual factors in performance analysis*. *International Journal of Performance Analysis in Sport*, 1(2), 67-78.

Module 4: Feedback Strategies for Sports Performance

Hours of Transaction: 10

4.1 Selection and Use of Feedback Methods

- Verbal feedback, positive reinforcement, video feedback, self-evaluation

4.2 Positive Reinforcement Techniques

- Using praise phrases and positive body language

4.3 Evaluation and Feedback Channels

- One-to-one, team/group, peer evaluation

Suggested readings specific to the module.

1. McGarry, T., & Franks, I. (2000). *Contextual factors in performance analysis*. *International Journal of Performance Analysis in Sport*, 1(2), 67-78.
2. O'Donoghue, P. (2007). *Statistics for sport and exercise studies: An introduction*. Routledge.
3. James, N., & Jones, R. (2006). *Performance analysis in football: A critical review*. *Journal of Sports Science & Medicine*, 5(4), 477-483.

Module 5: Teacher Specific Module

Hours of transaction:05

- The respective teacher will prepare the module content, allowing for adaptability in designing the material according to feasibility, prior modules, and pertinent information.

Core Compulsory Readings

- Laird, P., & Waters, L. (2008). Eyewitness recollection of sports coaches. *International Journal of Performance Analysis in Sport*, 8(1), 76-84.
- McGarry, T., O'Donoghue, P., & de Eira Sampaio, A. J. (Eds.). (2013). *Routledge handbook of sports performance analysis*. Routledge.
- O'Donoghue, P. (2009). *Research methods for sports performance analysis*. Routledge.
- O'Donoghue, P. (2014). *An introduction to performance analysis of sport*. Routledge.
- Mike Hughes (20 April 2015) *Essentials of Performance Analysis in Sport*: Routledge; 2nd edition
- Claudia Dalton (Editor) *Handbook of Sports Performance Analysis*, Routledge

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Core Suggested Readings

- Grehaigne, J. F., & Godbout, P. (1995). Tactical knowledge in team sports from a constructivist and cognitivist perspective. *Quest*, 47(4), 490-505.
- O'Donoghue, P. (2009). *Performance analysis of sport I: Methods of analysis*. Routledge.
- McGarry, T. (2009). Applied and theoretical perspectives of performance analysis in sport: Scientific issues and challenges. *International Journal of Performance Analysis in Sport*, 9(1), 128-14
- Siedentop, D. (1994). Sport education: Quality PE through positive sport experiences. *Human Kinetics*.
- Zakrajsek, R. A., & Zakrajsek, D. (2008). Teaching effectiveness in physical education. *Human Kinetics*.
- Jones, R. L., & Wallace, M. (2005). *Learning and teaching in physical education*. Routledge.

TEACHING LEARNING STRATEGIES

The class will be taught by using lectures and demonstration, seminars, classroom discussion, videos, charts and presentation methods.

MODE OF TRANSACTION

Lecture//Laboratory Work/ Field Work/ Outreach Activities/ Project Work/ Vocational Training/Viva/ Seminars/ Term Papers/Assignments/ Presentations/ Self-Study etc

ASSESSMENT RUBRICS

Evaluation Type		Marks
End Semester Evaluation		50
Continuous Evaluation		50
a)	Test Paper – 1 (Written/Oral)	10
b)	Test Paper – 2 (Written/Oral)	10
c)	Assignment Seminar Record Viva-Voce Any other relevant mode of evaluation	(Any three - each for 10 marks) 10 X 3 = 30 Marks
Total		100

Sample Questions to test Outcomes.

- Explain the objectives of the performance analysis in spots.
- What are the different methods of recording performance profiling results?

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- How can performance profiling contribute to maximizing athlete performance and motivation?

SEMESTER X

KU10DSCPES508: INCLUSIVE PHYSICAL ACTIVITY AND SPORTS FOR SPECIAL POPULATIONS

Semester	Course Type	Course Level	Course Code	Credits	Total Hours
10	DSC	500	KU10DSCPES508	4	60

Learning Approach (Hours/ Week)			Marks Distribution			Duration of ESE (Hours)
Lecture	Practical/ Internship	Tutorial	CE	ESE	Total	
60	-	60	50	50	100	2 hrs

Lecture/Tutorials, P/I=Practical/Internship, CE =Continuous Evaluation, ESE = End Semester Evaluation

Course Description

Inclusive physical activity and sports for special populations is a specialized course that explores the principles, strategies, and best practices for promoting physical activity and sports participation among individuals with disabilities and special needs. The course emphasizes inclusive approaches to physical education, recreation, and sports programming, with a focus on adapting activities to meet the diverse needs and abilities of participants.

Course Outcomes: At the end of the course, the student will be able to

CO No.	Expected outcome	Learning Domains
CO1	Understand the importance of inclusive physical activity for individuals with diverse abilities	R,U
CO2	Understand the strategies and best practices for promoting physical activity and sports	R,U,
CO3	Suggest adapted physical education programs to individuals with special needs	R,U,A

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CO4	Understand the practical experiences to apply in real-world settings.	A, An, C
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***Remember (R), Understand (U), Apply (A), Analyse (An), Evaluate (E), Create (C)**

Mapping of Course Outcomes to PSOs

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1		✓	✓		✓	
CO2		✓		✓		
CO3			✓	✓	✓	
CO4	✓	✓	✓	✓	✓	

COURSE CONTENTS

Module 1: Introduction to inclusive physical activity and sports

Hours of transaction: 10

- 1.1 Understanding diversity
- 1.2 Types, Causes, and prevalence of disability
- 1.3 Barriers to participation (physical, social, and environmental factors)
- 1.4 Communication and interaction strategies for inclusive settings

Suggested Reading specific to the module

- 1.1 Guttman, L. (1976) *Textbook of Sport for the Disabled*. Oxford: HM & M Publishers.
- 1.2 R, Metts. (2000). *Disability Issues, Trends and Recommendations for the World Bank* (Washington D.C.: World Bank,).
- 1.3 Ronald W. Davis (2002). *Inclusion through Sports*. Human Kinetics
- 1.4 Lauren J. Lieberman, Cathy Houston-Wilson, Michelle Grenier (2017). *Strategies for Inclusion. Physical Education for Everyone*. Human Kinetics

Module 2: Theoretical foundations of Inclusion

Hours of transaction:15

- 2.1 Meaning and definitions of inclusion
- 2.2 Importance of inclusivity in physical activity and sports
- 2.3 Social Model vs. Medical Model
- 2.4 Legal and ethical considerations in inclusive physical activity and sports

Suggested Reading specific to the module

- 2.1 Gary Stidder, Sid Hayes (2013). *Equity and Inclusion in Physical Education and Sport*. Routledge Publisher
- 2.2 Martin E. Block, Sandra Heck (2019). *Inclusive Physical Education around the World. origins, cultures, practices*. Taylor & Francis
- 2.3 Susan L. Kasser, Rebecca K. Lytle (2013). *Inclusive Physical Activity Promoting Health for a Lifetime*. Human Kinetics
- 2.4 Alexandre J. S. Morin, Danielle Tracey, Christophe Maïano (2017). *Inclusive Physical Activities. International Perspectives*. Information Age Publishing, Incorporated Publisher

Module 3: Inclusive Sports Programming

Hours of transaction:15

- 3.1 Person-centered planning
- 3.2 Individualized support plans
- 3.3 Design and implementation strategies
- 3.4 Effective communication strategies with diverse populations

Suggested Reading specific to the module

- 3.1 Daryl Siedentop, Hans Van Der Mars (2022). *Introduction to Physical Education, Fitness, and Sport*. Human Kinetics
- 3.2 Robert D. Steadward, E. Jane Watkinson, Garry D. Wheeler (2003). *Adapted Physical Activity*. University of Alberta Press Publisher
- 3.3 Sport England (2000) *Young People with a Disability and Sport*. London: Sport England.
- 3.4 C. Blauwet (2007). *Promoting the Health and Human Rights of Individuals with a Disability through the Paralympic Movement*. (ICSSPE,) at 21. (Blauwet-Promoting the Health).

Module 4: Adapted Physical Education

Hours of transaction:15

- 4.1 Principles and Practices
- 4.2 Sport classification systems and eligibility criteria
- 4.3 Adaptations for specific disability categories (mobility, sensory, cognitive, and behavioral)
- 4.4 Assistive technology and adaptive equipment for physical activity

Suggested Reading specific to module

- 4.1 Robert D. Steadward, E. Jane Watkinson, Garry D. Wheeler (2003). *Adapted Physical Activity*. University of Alberta Press Publisher
- 4.2 Joseph P. Winnick, David L. Porretta (2016) *Adapted Physical Education and Sport*. Human Kinetics
- 4.3 Joseph Winnick (2021). *Adapted Physical Education and Sport*. Human Kinetics
- 4.4 Joseph P. Winnick (2000). *Adapted Physical Education and Sport*. Human

Kinetics

Module 5 : Teacher Specific Module

Hours of transaction:15

- The respective teacher will prepare the module content, allowing for adaptability in designing the material according to feasibility, prior modules, and pertinent information.

Core Compulsory Readings

1. Ronald W. Davis (2002). Inclusion through Sports. Human Kinetics
2. Joseph Winnick (2021). Adapted Physical Education and Sport. Human Kinetics
3. Martin E. Block, Sandra Heck (2019). Inclusive Physical Education around the World. origins, cultures, practices. Taylor & Francis
4. Robert D. Steadward, E. Jane Watkinson, Garry D. Wheeler (2003). Adapted Physical Activity. University of Alberta Press Publisher
5. Barton, L. (1993). Disability, empowerment and physical education”, in J. Evans (ed.), Equality, Education and Physical Education. London: The Falmer Press.
6. K, DePauw & S. Gavron, (2005). Disability and Sport. (2n.d Ed) Illinois: Human Kinetics.

Core suggested Reading

1. Unesco (2015). Quality Physical Education. Guidelines for Policy-Makers. United Nations Education, Scientific & Cultural Organization
2. Oliver, M. (1990). The Politics of Disablement. Basingstoke: Macmillan.
3. Michael A. Horvat, Leonard H. Kalakian, Ron Croce, Virginia Dahlstrom (2011). Developmental/adapted Physical Education Making Ability Count. Pearson Benjamin Cummings Publisher
4. Samuel Hodge, Nathan Murata, Martin Block, Lauren Lieberman (2017). Case Studies in Adapted Physical Education. Empowering Critical Thinking. Taylor & Francis
5. Justin A. Haegele, Samuel R. Hodge, Deborah R. Shapiro (2020). Routledge Handbook of Adapted Physical Education. Taylor & Francis
6. National Consortium for Physical Education and Recreation for Individuals with Disabilities (U.S.), Luke Kelly (2006). Adapted Physical Education National Standards. Human Kinetics
7. Robert D. Steadward, E. Jane Watkinson, Garry D. Wheeler (2003). Adapted Physical Activity. University of Alberta Press Publisher

TEACHING LEARNING STRATEGIES

- The class will be taught by using lectures and demonstration, seminars, classroom discussion, videos, charts and presentations method.

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MODE OF TRANSACTION

- Lecture//Laboratory Work/ Field Work/ Outreach Activities/ Project Work/ Vocational Training/Viva/ Seminars/ Term Papers/Assignments/ Presentations/ Self-Study etc.,

ASSESSMENT RUBRICS

Evaluation Type		Marks
End Semester Evaluation		50
Continuous Evaluation		50
a)	Test Paper - 1 (Written/Oral)	10
b)	Test Paper - 2 (Written/Oral)	10
c)	Assignment Seminar Record Viva-Voce Any other relevant mode of evaluation	(Any three - each for 10 marks) 10 X 3 = 30 Marks
Total		100

Sample Questions to test Outcomes.

1. What are some common disabilities that require adapted physical education programming?
2. How does adapted physical education differ from traditional physical education?
3. What are some common challenges faced in implementing inclusive physical education, and how can they be addressed?
4. What are the benefits of inclusive physical education for students with disabilities, as well as those without disabilities?

SEMESTER X

**KU10DSCPES509: COUNSELLING SKILLS IN SPORTS PSYCHOLOGY
(Interdisciplinary Course (IDC) offered with School of Behavioural Sciences)**

Semester	Course Type	Course Level	Course Code	Credits	Total Hours
10	DSC	500	KU10DSCPES509	4	75

Learning Approach (Hours/ Week)			Marks Distribution			Duration of ESE (Hours)
Lecture	Practical/ Internship	Tutorial	CE	ESE	Total	
45	30	75	50	50	100	2 hrs

Lecture/Tutorials, P/I=Practical/Internship, CE =Continuous Evaluation, ESE = End Semester Evaluation

Course Description

This course in Counselling Skills in Sports Psychology will familiarize students with the importance and strategies of counseling in sports settings, providing them with knowledge about counseling issues in sports. It will also enable them to assess and diagnose stress and anxiety in sports provide them with knowledge about the interventions to manage stress and anxiety, and explore the challenges and counseling needed for improved rehabilitation adherence

Course Outcomes: At the end of the course, the student will be able to

CO No.	Expected outcome	Learning Domains
CO1	Identify and apply counseling techniques and strategies in sports settings	U,A
CO2	Comprehend and understand the special counseling issues in sports.	U,E
CO3	Able to assess and diagnose the stress and anxiety in sports.	U,A,E
CO4	Effectively choose and integrate counseling skills to manage stress and anxiety and for improved rehabilitation	A, An,E,C

Syllabus – Five-Year Integrated Master of Physical Education and Sports.

	adherence	
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***Remember (R), Understand (U), Apply (A), Analyse (An), Evaluate (E), Create (C)**

Mapping of Course Outcomes to PSOs

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1						
CO2		✓	✓			
CO3			✓	✓		✓
CO4		✓	✓	✓	✓	✓

COURSE CONTENTS

Module 1: Introduction to Counselling

Hours of transaction:10

- 1.1 Definition, Role, and importance of Counseling process
- 1.2 Counselling process
- 1.3 Strategies and Ways of Counseling
- 1.4 Role of Clients and Counselor and Physical Settings.

Suggested readings specific to the Module

- 1.1 Corey, G. (2015). *Theory and practice of counseling & psychotherapy*. New Delhi: Pearson.
- 1.2 Cormier, L. S., & Nurius, P. S. (2003). *Interviewing and change strategies for helpers (Fifth ed.)*. Pacific Grove, CA: Brooks/Cole.
- 1.3 Gladding, S. T. (2012). *Counseling: A comprehensive profession*. New Delhi: Pearson
- 1.4 Joyce, P., & Sills, C. (2014). *Skills in gestalt counseling & psychotherapy*. Los Angeles: Sage.

Module 2: Specific Counselling Issues

Hours of transaction:15

- 2.1 Counseling for substance Abuse Problems and Eating Disorders
- 2.2 Recognizing and assisting athletes with eating disorders
- 2.3 Counselling athletes with nutritional concerns
- 2.4 Providing psychological assistance to injured and disabled athletes ,Suicide in Sports

Suggested readings specific to the Module

- 2.1 Reichenberg, L.W.(2010). Theories of Counseling and Psychotherapy: Systems, Strategies, and Skills. 3rd Ed. Indian reprint: Pearson.
- 2.2 Seligman, L. (1990). Selecting effective treatments. San Francisco: JosseyBass.
- 2.3 Sharf, R. S. (2012). Theories of Psychotherapy & Counseling: Concepts and Cases (5th Ed). Brooks/ Cole Cengage Learning
- 2.4 Tolan, J. (2012). Skills in person-centred counseling & psychotherapy. Los Angeles: Sage. Wills, F. (2008). Skills in cognitive behaviour counseling & psychotherapy. Los Angeles: Sage

Module 3: Counselling for management of stress and anxiety in sports Hours of transaction:20

- 3.1 Assessment and Diagnosis of Stress and Anxiety in Sports, Conceptual Framework of Stress
- 3.2 Injury as A Source of Stress, Stress as A Precursor to Injury
- 3.3 Multidimensional Anxiety and Athletic Injury
- 3.4 The Interrelationship Among Stress, Anxiety, and Injury
- 3.5 Effectiveness of Stress and Anxiety Management Interventions

Suggested readings specific to the Module

- 3.1 Counselling in Sports Medicine by Richard Ray, Diane Wiese, Human Kinetics.
- 3.2 Psychological Bases of Sport Injuries by David Pargman, Fitness Information Technology.

Module 4: Counseling for Improved Rehabilitation Adherence Hours of transaction:20

- 4.1 Challenges that Injured Athletes Face
- 4.2 The Nature of Programme Adherence
- 4.3 Counseling Strategies to promote Rehabilitation Adherence
- 4.4 Field work on counselling to sportspersons – submission of report

Suggested readings specific to the Module

- 4.1 Psychological Bases of Sport Injuries by David Pargman, Fitness Information Technology.
- 4.2 The Elements of Counselling by Scott T. Meier, Brooks Cole.

Module 5 : Teacher Specific Module Hours of transaction:10

- The module content is to be prepared by the respective teacher, allowing for adaptability in designing the material according to feasibility, prior modules, and pertinent information

Core compulsory reading

- Bellack, A. S., Hersen, M., & Kazdin, A. E. (Eds.) (2012). International handbook of behavior modification and therapy. New York: Springer Science & Business Media.
- Corey, G. (2015). Theory and practice of counseling & psychotherapy. New Delhi: Pearson.
- Cormier, L. S., & Nurius, P. S. (2003). Interviewing and change strategies for helpers (Fifth ed.). Pacific Grove, CA: Brooks/Cole.
- Gladding, S. T. (2012). Counseling: A comprehensive profession. New Delhi: Pearson
- Joyce, P., & Sills, C. (2014). Skills in gestalt counseling & psychotherapy. Los Angeles: Sage.
- Lister-Ford, C. (2002). Skills in transactional analysis counseling & psychotherapy. Los Angeles: Sage.
- Rao, K. (2010). Psychological Interventions: From Theory to Practice. In G. Misra (Ed): Psychology in India.
- Reichenberg, L.W.(2010). Theories of Counseling and Psychotherapy: Systems, Strategies, and Skills. 3rd Ed. Indian reprint: Pearson.
- Seligman, L. (1990). Selecting effective treatments. San Francisco: JosseyBass.

Core suggested reading

- Sharf, R. S. (2012). Theories of Psychotherapy & Counseling: Concepts and Cases (5th Ed). Brooks/ Cole Cengage Learning
- Tolan, J. (2012). Skills in person-centred counseling & psychotherapy. Los Angeles: Sage.
- Wills, F. (2008). Skills in cognitive behaviour counseling & psychotherapy. Los Angeles: Sage

LIST OF PRACTICUMS

- Referral of Injured Athletes for Counseling and Psychotherapy
- Documentation in Counseling
- Ethical Perspectives in Counseling

TEACHING LEARNING STRATEGIES

The subject will be taught by using lectures, demonstrations, seminars, classroom discussions, charts, and presentation methods.

MODE OF TRANSACTION

Lecture//Laboratory Work/Field Work/ Outreach Activities/Project Work/ Vocational Training/Viva/ Seminars/ Term Papers/Assignments/ Presentations/ Self-Study etc.

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ASSESSMENT RUBRICS

Evaluation Type		Marks
End Semester Evaluation		50
Continuous Evaluation		50
a)	Test Paper – 1 (Written/Oral)	10
b)	Test Paper – 2 (Written/Oral)	10
c)	Assignment Seminar Record Viva-Voce Any other relevant mode of evaluation	(Any three - each for 10 marks) 10 X 3 = 30 Marks
Total		100

Sample Questions to test Outcomes.

- Explain the Strategies and different ways of Counseling.
- Discuss the Counseling Strategies to promote Rehabilitation Adherence
- What are the strategies which can be used for program adherence?

SEMESTER X

KU10DSSPES502: LOAD MONITORING AND TRAINING

Semester	Course Type	Course Level	Course Code	Credits	Total Hours
10	DSS	500	KU10DSSPES502	4	90

Learning Approach (Hours/ Week)			Marks Distribution			Duration of ESE (Hours)
Lecture	Practical/ Internship	Tutorial	CE	ESE	Total	
30	60	-	50	50	100	2 hrs

Lecture/Tutorials, P/I=Practical/Internship, CE =Continuous Evaluation, ESE = End Semester Evaluation

Course Description

This course in Monitoring Training and performance provides a comprehensive understanding of various monitoring techniques and their application in enhancing athlete performance. Students will explore various load management strategies fundamental principles, and advanced methods, and will be oriented to the emerging technologies covering physiological responses to training load, injury prevention strategies, facilitation of optimal recovery, and specialized considerations for diverse athlete populations.

Course Outcomes: At the end of the course, the student will be able to

CO No.	Expected outcome	Learning Domains
CO1	Demonstrate a comprehensive understanding of load monitoring in sports performance, analyze the intricate relationship between training load, and athlete response, and recognize signs of detraining within the fatigue continuum for effective load management strategies.	U,An
CO2	Demonstrate a comprehensive understanding of the physiological responses to training load and exhibit proficiency in recognizing and analyzing individual variability in physiological responses.	U,A,An
CO3	Develop a comprehensive understanding of analyzing the intricate relationship between training load and injury risk and become adept at employing injury surveillance and risk assessment.	U,A,An,E

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CO4	Develop proficiency in utilizing diverse load monitoring methods and technologies, catering to both traditional and modern approaches, and engage in practical fieldwork to collect and interpret load monitoring data across various sports contexts.	A, An, E, C
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***Remember (R), Understand (U), Apply (A), Analyse (An), Evaluate (E), Create (C)**

Mapping of Course Outcomes to PSOs

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	✓	✓	✓	✓	✓	✓
CO2		✓	✓	✓	✓	✓
CO3		✓	✓	✓	✓	✓
CO4		✓	✓	✓	✓	✓

COURSE CONTENTS

Module 1: Introduction to Load Monitoring and Training

Hours of transaction: 20

1.1 Understanding Load in Sports Performance

- Definition and types of loads in sports training (e.g., mechanical, physiological, psychological)
- Importance of athlete monitoring in optimizing performance and reducing injury risk
- Integrating monitoring with coaching

1.2 Load-Response Relationships and Performance Outcomes

- Physiological effect of training stress, general adaptation syndrome model,
- Fitness fatigue model, Stimulus-fatigue recovery-adaptation model.
- Understanding the relationship between training load, athlete response, and performance outcomes

1.3 Detraining and over-training

- Recognize detraining in athlete & Fatigue continuum
- Risk of overreaching: Functional and non-functional over-reaching
- Over-training: Markers of over-training
- Interdisciplinary and multifactorial approaches to avoid over-training

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- Guidelines for avoiding overtraining and load management strategies to optimize performance, recovery, and adaptation

Suggested readings specific to the Module

- 1.1** McGuigan, M. (2017). *Monitoring Training and Performance in Athletes. Human Kinetics.*
- 1.2** Mujika, I., & Padilla, S. (2000). *Detraining: loss of training-induced physiological and performance adaptations. Part I: short term insufficient training stimulus. Sports Medicine, 30(2), 79-87.*
- 1.3** Haff, G. G., & Nimphius, S. (2012). *Training principles for power. Strength and Conditioning Journal, 34(6), 2-12.*
- 1.4** Bourne, M. N., Duhig, S. J., Timmins, R. G., Williams, M. D., Opar, D. A., Al Najjar, A., ... & Shield, A. J. (2017). *Impact of the Nordic hamstring and hip extension exercises on hamstring architecture and morphology: implications for injury prevention. British Journal of Sports Medicine, 51(5), 469-477.*

Module 2: Physiological Responses to Training Load

Hours of transaction: 20

2.1 Understanding Physiological Adaptations

- Physiological responses to different types and intensities of training load (e.g., aerobic, anaerobic, strength)
- Individual variability in physiological responses to training
- Factors influencing adaptation and performance enhancement.
- Monitoring Cardiovascular and Metabolic Load and assessing cardiovascular and metabolic responses to training load
- Monitoring heart rate, blood lactate, and other physiological markers
- Implications for optimizing aerobic and anaerobic training programs

2.2 Neuromuscular Adaptations and Load Monitoring

- Neuromuscular responses to training load and fatigue
- Techniques for monitoring neuromuscular function (e.g., electromyography, force platforms)
- Strategies for enhancing neuromuscular performance and reducing injury risk

Suggested readings specific to the Module

- 2.1** McGuigan, M. (2017). *Monitoring Training and Performance in Athletes. Human Kinetics.*
- 2.2** McGuigan. (2016). *Monitoring training and performance in athletes: Human Kinetics*
- 2.3** Halson, S. L. (2014). *Monitoring training load to understand fatigue in athletes. Sports Medicine, 44(2), 139-147.*

- 2.4 Gabbett, T. J. (2016). *The training–injury prevention paradox: should athletes be training smarter and harder? British Journal of Sports Medicine, 50(5), 273-280.*

Module 3: Load Monitoring and Injury Prevention

Hours of transaction:20

3.1 Quantifying training stress

- External load assessment tools (Time motion analysis, GPS, power meters, volume load, and intensity load)
- Internal load assessment and tools (Rating of perceived exertion, HR, lactate, training impulse, Muscle soreness, Daily analysis of life demands of the athlete, recovery quality, recovery stress, mood state, and training distress)
- Measures of fitness and fatigue: Neuro-muscular fatigue, Muscle stiffness, force production dynamic strength index, heart rate variability, heart rate recovery, hormonal and Biochemical markers

3.2 Load-Related Injury Risk Factors

- Understanding the relationship between training load and injury risk
- Identifying load-related injury risk factors (e.g., acute vs. chronic load, workload spikes)
- Injury surveillance and risk assessment methods in sports settings

3.3 Load Management Strategies for Injury Prevention

- Load monitoring strategies to mitigate injury risk
- Load modification and progression strategies for injury prevention
- Role of load monitoring in return-to-play decision-making and rehabilitation

3.4 Psychological Load and Injury Risk

- Psychological factors influencing injury risk and resilience
- Monitoring psychological load and stress in athletes
- Strategies for managing psychological load to reduce injury risk

Suggested readings specific to the Module

- 3.1 McGuigan, M. (2017). *Monitoring Training and Performance in Athletes. Human Kinetics.*
- 3.2 Gabbett, T. J., & Windt, J. (2017). *Training injuries in rugby league: an evaluation of skill-based conditioning games. Journal of Strength and Conditioning Research, 31(2), 517-525.*
- 3.3 Drew, M. K., & Finch, C. F. (2016). *The relationship between training load and injury, illness and soreness: a systematic and literature review. Sports Medicine, 46(6), 861-883.*

3.4 McGuigan, M. R., & Cormack, S. J. (2019). *Strength and power profiling of athletes: selecting tests and how to use the information for program design.* In P. Comfort & A. Earle (Eds.), *Strength and conditioning for sports performance* (pp. 195-216). Routledge.

Module 4: Load Monitoring Methods and Technologies

Hours of transaction: 20

4.1 Various Methods and Technologies

- Overview of traditional and modern methods for load monitoring (e.g., subjective, objective, technology-based)
- Instrumented sports equipment wearable sensors
- Apps and watches, force plate, infrared timing system
- Data collection, analysis, and interpretation techniques for monitoring athlete load

4.2 Load Monitoring in Special Populations

- Load monitoring considerations for special populations (e.g., youth athletes, masters' athletes, athletes with disabilities)
- Tailoring load monitoring strategies to accommodate individual needs and capabilities
- Implications for optimizing performance and minimizing injury risk in special populations
- Athlete monitoring guidelines for individual and team sports

4.3 Technology Integration and Future Trends

- Emerging technologies for load monitoring and training optimization
- Integration of data analytics and machine learning in load monitoring
- Future directions and trends in load monitoring and training science

4.4 Field works on load monitoring assessments and interpretation in the choice of sports (Practicum)

- Engage in fieldwork to collect data using various monitoring techniques such as GPS tracking, heart rate monitors, and wearable sensors.
- Set up the devices/equipment, and gather data during training sessions
- Load Monitoring Software Training: learn how to navigate the software interface, input data, generate reports, and interpret analytics to inform training decisions.
- Injury Prevention Assessment: Learn practical assessment techniques for identifying potential injury risk factors in athletes.

Suggested readings specific to the Module

4.1 McGuigan, M. (2017). *Monitoring Training and Performance in Athletes.* Human Kinetics.

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- 4.2** Hulin, B. T., Gabbett, T. J., Blanch, P., Chapman, P., Bailey, D., & Orchard, J. W. (2014). Spikes in acute workload are associated with increased injury risk in elite cricket fast bowlers. *British Journal of Sports Medicine*, 48(8), 708-712.
- 4.3** Impellizzeri, F. M., Marcora, S. M., Coutts, A. J., & Sassi, A. (2019). Internal and external training load: 15 years on. *International Journal of Sports Physiology and Performance*, 14(2), 270-273.
- 4.4** Brink, M. S., Visscher, C., Coutts, A. J., & Lemmink, K. A. (2018). Changes in perceived stress and recovery in overreached young elite soccer players. *Scandinavian Journal of Medicine & Science in Sports*, 28(4), 1476-1483.

Module 5: Teacher Specific Module

Hours of transaction:10

- The respective teacher will prepare the module content, flexibly designing the material according to feasibility, prior modules, and pertinent information.

Core compulsory reading

- McGuigan. (2016). Monitoring training and performance in athletes: Human Kinetics
- Halson, S. L. (2014). Monitoring training load to understand fatigue in athletes. *Sports Medicine*, 44(2), 139-147.
- Gabbett, T. J. (2016). The training–injury prevention paradox: should athletes be training smarter and harder? *British Journal of Sports Medicine*, 50(5), 273-280.

Core suggested reading

- Drew, M. K., & Finch, C. F. (2016). The relationship between training load and injury, illness and soreness: a systematic and literature review. *Sports Medicine*, 46(6), 861-883.
- McGuigan, M. R., & Cormack, S. J. (2019). Strength and power profiling of athletes: selecting tests and how to use the information for program design. In P. Comfort & A. Earle (Eds.), *Strength and conditioning for sports performance* (pp. 195-216). Routledge.

LIST OF PRACTICUMS

- To prepare a training plan (Session plan, days plan, micro cycle plan, mesocycle plan and macrocycle plan in different periods of training for various sports events)
- Evaluation of training (Testing of motor components and performance)

TEACHING LEARNING STRATEGIES

The subject will be taught by using lectures, demonstrations, seminars, classroom discussions, charts, and presentation methods.

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MODE OF TRANSACTION

Lecture//Laboratory Work/Field Work/ Outreach Activities/Project Work/ Vocational Training/Viva/ Seminars/ Term Papers/Assignments/ Presentations/ Self-Study etc.

ASSESSMENT RUBRICS

Evaluation Type		Marks
End Semester Evaluation		50
Continuous Evaluation		50
a)	Test Paper – 1 (Written/Oral)	10
b)	Test Paper – 2 (Written/Oral)	10
c)	Assignment Seminar Record Viva-Voce Any other relevant mode of evaluation	(Any three - each for 10 marks) 10 X 3 = 30 Marks
Total		100

Sample Questions to test Outcomes.

- Explain the methods of quantifying the training stresses.
- Explain the importance of athlete monitoring in optimizing performance.
- Explain the load management strategies for injury prevention.

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SEMESTER X

KU9RPHPE502: DISSERTATION
(40 Credits of Honours with research)

COURSE CODE	KU9RPHPE502
CREDIT	40
For dissertation / project for the fifth year the credit for different pathways will be as per the common guidelines suggested by the university	

KANNUR UNIVERSITY

SCHOOL OF PHYSICAL EDUCATION AND SPORTS SCIENCES

COURSES OFFERED FOR OTHER DEPARTMENTS

SCHEME AND SYLLABUS

(Under Choice Based Credit Semester System)

**Based on Kannur University Five-Year Integrated Programme
Regulations**

2024-25 Academic Session Onwards

List and Category of Courses

Sl No.	Course Title	Category	Semester	Pre-requisite
1.	FOUNDATION OF PHYSICAL EDUCATION, EXERCISE SCIENCE AND SPORT	MDC	1 & 2	Nil
2.	DANCE FITNESS COURSE	SEC	4	Nil
3.	FIRST AID AND EMERGENCY CARE	SEC	4	Nil
4.	PHYSICAL LITERACY AND FUNDAMENTAL MOVEMENT SKILLS	SEC	5	Nil
5	TESTING IN FITNESS	SEC	6	Nil
6.	MASSAGE AND MYOFASCIAL RELEASE	SEC	6	Completed at least two courses DSC courses in Physical Education and Sports Sciences, including courses in Anatomy/Physiology and Human Sciences/Kinesiology at 200 level
7.	YOGA FOR HEALTH	VAC	3	Nil
8.	HEALTH AND WELLNESS	VAC	3	Nil
9.	WOMEN HEALTH- GENDER PERSPECTIVES	VAC	3	Nil
10.	NUTRITION AND WEIGHT MANAGEMENT	VAC	4	Nil
11.	HUMAN BODY MECHANICS AND ERGONOMICS	VAC	4	Nil
12.	HYGIENE AND HEALTHY LIFESTYLE	VAC	4	Nil

MULTIDISCIPLINARY COURSES (MDC)

KU1MDCPES101: FOUNDATION OF PHYSICAL EDUCATION, EXERCISE SCIENCE AND SPORT

Semester	Course Type	Course Level	Course Code	Credits	Total Hours
1 OR 2	MDC	100	KU1MDCPES101	3	45

Learning Approach (Hours/ Week)			Marks Distribution			Duration of ESE (Hours)
Lecture	Practical/ Internship	Tutorial	CE	ESE	Total	
45	-	-	50	50	100	1 hr. 30 minutes

Course Description

This course offers an introduction to the concepts of Physical Education, exercise science and sport, providing a dynamic nature of the discipline providing knowledge base and information on expanding career opportunities in the field.

COURSE OUTCOMES

After the completion of the course, the students will be able to

CO No.	Expected Outcome	Learning Domains
CO1	Understand the meaning and philosophy, goals and objectives of Physical Education, Exercise Science and Sport	K, U
CO2	Understand the historical foundations and identify and recognize the implications of changing demographics for Physical Education, Exercise Science and Sport.	U
CO3	Be orient to biomechanical, physiological, sociological, psychological foundations related to the discipline.	K, U
CO4	Understand the career and professional development and future trends in Physical Education, Exercise Science and Sport.	U, A

***Remember(K), Understand(U), Apply(A), analyze (An), Evaluate (E), Create(C), and Synthesis (Sy)**

Mapping of Course Outcomes to PSOs						
	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	✓	✓	✓	✓		
CO2	✓	✓	✓		✓	
CO3	✓	✓	✓	✓		
CO4	✓	✓	✓		✓	

COURSE CONTENTS

Module 1: Introduction to Physical Education, Exercise Science and Sport.

Hours of transaction: 10

- 1.1 Understand the meaning and philosophy of contemporary physical education, exercise science and sport.
- 1.2 Understand the goals and objectives of Physical Education in relation to goals of education. Understand the domains and taxonomies of learning and assessment and purpose of learning.
- 1.3 Meaning and understanding of health and wellness and implications of health and wellness movement for Physical Education, Exercise Science and Sport.
- 1.4 Physical activity and fitness movement and their implications.

Suggested readings specific to the module.

- 1.1 Wuest, D A, and Bucher, Charles, (2010) A. Foundations of Physical Education, Exercise Science and Sport. Tata McGraw Hill., New Delhi
- 1.2 John, H.L.,1969, A brief history of Physical Education. The Ronald Press Company, New York.
- 1.3 Kamlesh, M.L.,1988, Physical Education Facts and Foundations. Chauhan Printing press. New Delhi.
- 1.4 Kamlesh, M.L., 1997. Foundations of Physical Education. Metropolitan Book pvt. Ltd. New Delhi. 4
- 1.5 Willgoose.C.,1984, Curriculum Physical Education, Prentice-Hall, New Jersey.

Module 2: Historical Foundations and Changing Demographics of Physical Education, Exercise Science and Sport

Hours of transaction: 10

- 2.1 Historical foundation of sport and physical education
- 2.2 Significant recent developments in the field –
 - Wellness movement
 - School Physical Education and Physical Activity
 - Disease prevention and health promotion

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2.3 Olympics and growth of Sports

2.4 Girls and women in sports; sports for differently abled.

Suggested Reading specific to module

2.1 Wuest, D A, and Bucher, Charles, A. (2010) Foundations of Physical Education, Exercise Science and Sport. Tata McGraw Hill., New Delhi

2.2 Barrie Houlihan, Dominic Malcolm(2016)- Sports and society : a student introduction

2.3 Jay Coakley (2020)- Sports and Society : A Sociological perspective

2.4 David Kirk ,Dawn Penney(2014)- Physical Education and Sports in a changing Society.

2.5 John Horne, Allen Tomilson (2012)- Sociology Of Sports and Physical Activity

Module 3: The Scientific basis of Physical Education, Exercise Science and Sports.

Hours of transaction: 10

3.1 Motor behaviour and motor development

3.2 Philosophical Foundations of Physical Education; Idealism, Pragmatism, Naturalism &Existentialism

3.3 Understanding Kinesiology Biomechanics - Mechanical principles and concepts related to movement.

3.4 Overview of exercise physiology – Principles and physiological basis of exercise and fitness, development. Overview of nutrition and fitness.

3.5 Understanding sociology of sport. Fundamental concepts of sport and exercise psychology.

Suggested Reading specific to module

3.1 Bucher, Charles A., (1983). Foundations of Physical Education. St. Louis: The C.V. MosbyCompany.

3.2 Kamlesh, M.L., (1988). Physical Education: Facts and Foundation. New Delhi: P.B.Publications

3.3 Sharma, O.P., (1998). History of Physical Education. New Delhi: Khel Shitya Kendra.

3.4 Wakharkar, D.G., (1967). Manual of Physical Education in India. Bombay: PearlPublications .

Module 4: Careers and Professional Development

Hours of transaction: 10

4.1 Choosing and career and maximizing professional development

4.2 Careers in Physical Education, Exercise Science and Sport –

- Teaching
- Coaching
- Fitness and Health Related
- Careers in sport

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- 4.3 Major Schemes and programmes related to physical education and sports - Khelo India, Fit India programs, TOPS (Target Olympic Podium Scheme),
- 4.4 National awards and honours; Major sports competitions
- 4.5 Future trends in development and professional delivery – issues and challenges

Suggested Reading specific to module

- 4.1 Wuest, D A, and Bucher, Charles, (2010) A. Foundations of Physical Education, Exercise Science and Sport. Tata McGraw Hill., New Delhi
- 4.2 Bevinson Perinbaraj. S, History of Physical Education, Vinsi Publications, Karaikudi 2002.
- 4.3 Chandra Shekar. K, Foundation of Physical Education & Sports, Khel Sahitya Kendra, New Delhi, 2004.
- 4.4 Deepak Jain, Foundation of Physical Education, Sports Publication New Delhi, 2003.
- 4.5 Piyush Jain C.S.Tomar, History, Foundation of Physical Education and Educational Psychology, Khel Sahitya Kendra, New Delhi, 2006.
- 4.6 Shandra Shekar, Principles & History of Physical Education, Khel Sahitya Kendra, New Delhi, 2004.

Module 5: Teacher Specific Module:

Hours of transaction: 10

- The respective teacher will prepare the module content, allowing for adaptability in designing the material according to feasibility, prior modules, and pertinent information.

Core Compulsory Readings

- Sharma O.P, History of Physical Education, Khel Sahitya Kendra, New Delhi, 2008.
- SitaramSharam& Anil kr. Vanaik, Principles of Physical Education, Friends Publication, New Delhi, 2003.
- Bucher, Charles A., (1983). Foundations of Physical Education. St. Louis: The C.V. Mosby Company.
- Kamlesh, M.L., (1988). Physical Education: Facts and Foundation. New Delhi: P.B. Publications

Core suggested readings

- Baljit Singh, Principles of Physical Education, Sports Publication New Delhi, 2009.
- Sanjay &A.Rawat, History, Principles and Foundation of Physical Education, Sports Publication New Delhi, 2015.

TEACHING LEARNING STRATEGIES

- The class will be taught by using lectures and demonstrations, seminars, classroom discussions, videos, charts, and presentation methods

MODE OF TRANSACTION

Syllabus – Five-Year Integrated Master of Physical Education and Sports.

- Lecture//Laboratory Work/ Field Work/ Outreach Activities/ Project Work/ Vocational Training/Viva/ Seminars/ Term Papers/Assignments/ Presentations/ Self-Study etc

ASSESSMENT RUBRICS

Evaluation Type		Marks
End Semester Evaluation		50
Continuous Evaluation		50
a)	Test Paper- 1 (Written/Oral)	10
b)	Test Paper-2 (Written/Oral)	10
c)	Assignment Seminar Record Viva-Voce Any other relevant mode of evaluation	(Any three- each for 10 marks) 10 X 3 = 30 Marks
Total		100

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SKILL ENHANCEMENT COURSE

KU4SECPES101– DANCE FITNESS COURSE

Semester	Course Type	Course Level	Course Code	Credits	Total Hours
4	SEC	100	KU4SECPES101	3	75

Learning Approach (Hours/ Week)			Marks Distribution			Duration of ESE (Hours)
Lecture	Practical/ Internship	Tutorial	CE	ESE	Total	
15	60	75	50	50	100	1 hr. 30 minutes

L/T=Lecture/Tutorials, P=Practical, CE =Continuous Evaluation, ESE = End Semester Evaluation

Course Pre- requisite: Nil

Semester: 3

Credits: 3

Course Description

Dance Fitness is a dynamic course designed to integrate dance movements with cardiovascular exercise to improve fitness levels, coordination, flexibility, and overall well-being. This course combines various dance styles with aerobic routines to create an engaging and enjoyable workout experience for participants of all fitness levels.

Course Outcome

After completing this course, the students will be able to

CO No.	Expected Outcome	Learning Domains
CO1	Demonstrate proficiency in basic dance techniques, including rhythm, coordination, and body alignment.	U, A
CO2	Adapt dance fitness routines to accommodate individual fitness levels	A, E,
CO3	Enhance body awareness, self-expression, and confidence through movement exploration and choreography.	U, A, An
CO4	Collaborate with peers in group settings to create and perform dance fitness routines	U, A, C

***Remember(R), Understand(U), Apply(A), Analyze (An), Evaluate (E), Create(C), and Synthesis (Sy)**

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Mapping of Course Outcomes to PSOs

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	✓	✓	✓	✓	✓	✓
CO2		✓	✓	✓	✓	✓
CO3	✓	✓	✓	✓		
CO4		✓	✓	✓	✓	

COURSE CONTENTS

Module 1: Introduction to dance fitness

Hours of transaction: 10

- 1.1 History of basic dance techniques
- 1.2 principles and benefits of dance fitness
- 1.3 Warm-up and cool-down techniques for dance workouts
- 1.4 Basic posture, alignment, footwork, and arm movements

Suggested Reading specific to module

- 1.1 Marina Aagaard (2014).Dance Fitness. Lulu.com Publisher
- 1.2 Caron Bosler (2009) 15-Minute Dance Workout. Dorling Kindersley Limited Publisher
- 1.3 Janice M. Bibik, Margaret P. Chandler, Laurie Daniels-Deyo (1988). Aerobic Dance
- 1.4 Fitness for College and Beyond. Kendall/Hunt Publisher

Module 2: Dance styles and techniques

Hours of transaction:

15

- 2.1 Different dance styles (zumba, aerobics)
- 2.2 Learning basic steps, combinations, and routines for each style
- 2.3 Health benefits of different dance styles
- 2.4 Practicing rhythmic patterns, coordination, and expression

Suggested Reading specific to module

- 2.1 Karen S. Mazzeo, Judy Kisselle (1987). Aerobic Dance. A Way to Fitness. Morton Publishing Company
- 2.2 Michelle Medlock Adams (2020). Zumba Fitness. eBooks2go Incorporated
- 2.3 Susan K. Wilmoth (1986). Leading Aerobic Dance-exercise. Human Kinetics Publishers
- 2.4 Jacki Sorensen, Bill Bruns (1979). Aerobic Dancing. Rawson, Wade Publisher

Module 3: Dance Workouts

Hours of transaction: 15

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- 3.1 Cardio dance workouts
- 3.2 Strength and conditioning exercises for dance fitness
- 3.3 Flexibility and mobility training for dance fitness
- 3.4 Interval training on dance workouts

Suggested Reading specific to module

- 3.1 Caron Bosler (2008).15 Minute Dance Fitness. DK Publishing
- 3.2 Matthew Wyon, Sefton Clarke (2021). Strength and Conditioning for Dancers. Crowood Press
- 3.3 Jay Blahnik (2011). Full-body Flexibility. Human Kinetics
- 3.4 Eric Franklin (2019). Conditioning for Dance. Training for Whole-body Coordination and Efficiency. Human Kinetics

Module 4: Stress Management and relaxation techniques

Hours of transaction: 20

- 4.1 Breathing technique
- 4.2 Mindfulness practices
- 4.3 Progressive muscle relaxation
- 4.4 Stretching (static and dynamic)

Suggested Reading specific to module

- 4.1 Martha Davis, Elizabeth Robbins Eshelman, Matthew McKay (2008).The Relaxation and Stress Reduction Workbook Chapter Singles. New Harbinger Publications
- 4.2 Ronald D. Siegel (2009). The Mindfulness Solution. Everyday Practices for Everyday Problems. Guilford Publications Publisher
- 4.3 Sophie Gabriel (2002). Breathe for Life. How to Reduce Stress and Enhance Your Fitness. Turner Publishing Company
- 4.4 Pavel Tsatsouline (2002). Relax Into Stretch. Instant Flexibility Through Mastering Muscle Tension. Dragon Door Publications

Module 5 : Teacher Specific Module

:

Hours of transaction: 10

Practical work, project and assessment based on the prior learning and modules to be suggested and guided by the respective teacher

Core Compulsory Readings

1. Marina Aagaard (2014).Dance Fitness. Lulu.com Publisher
2. Michelle Medlock Adams (2020). Zumba Fitness. eBooks2go Incorporated
3. Susan K. Wilmoth (1986). Leading Aerobic Dance-exercise. Human Kinetics Publishers
4. Jay Blahnik (2011). Full-body Flexibility. Human Kinetics
5. Sophie Gabriel (2002). Breathe for Life. How to Reduce Stress and Enhance Your Fitness. Turner Publishing Company

Core Suggested Readings

1. Sara James (2014). Step Aerobics and Aerobic Dance. Mason Crest Publisher

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2. Esther Pryor, Minda Goodman Kraines (1996). Keep Moving It's Aerobic Dance. Mayfield Publishing Company
3. Dixie Stanforth, Deborah Ellison (1997). Aerobic Dance Exercise. McGraw-Hill Higher Education
4. Jan Galen Bishop (1992). Fitness Through Aerobic Dance. Gorsuch Scarisbrick Publishers
5. Maxine Polley (1981). Dance Aerobics. Anderson & World

TEACHING LEARNING STRATEGIES

- The class will be taught by using lectures and demonstration, seminars, classroom discussion, videos, charts and presentations method.

MODE OF TRANSACTION

- Lecture//Laboratory Work/ Field Work/ Outreach Activities/ Project Work/ Vocational Training/Viva/ Seminars/ Term Papers/Assignments/ Presentations/ Self-Study etc

ASSESSMENT RUBRICS

Evaluation Type		Marks
End Semester Evaluation		50
Continuous Evaluation		50
a)	Test Paper- 1 (Written/Oral)	10
b)	Test Paper-2 (Written/Oral)	10
c)	Assignment Seminar Record Viva-Voce Any other relevant mode of evaluation	(Any three-each for 10 marks) 10 X 3 = 30 Marks
Total		100

Sample Questions to test Outcomes.

1. What is dance fitness?
2. Discuss the benefits of dance fitness for physical health, including cardiovascular fitness, muscular strength, and flexibility.
3. How does dance fitness contribute to mental well-being and stress reduction?
4. Explain the importance of proper warm-up and cool-down routines in dance fitness, and discuss some key components of each.

SKILL ENHANCEMENT COURSE

KU4SECPES102: FIRST AID AND EMERGENCY CARE

Semester	Course Type	Course Level	Course Code	Credits	Total Hours
4	SEC	100	KU4SECPES102	3	60

Learning Approach (Hours/ Week)			Marks Distribution			Duration of ESE (Hours)
Lecture	Practical/ Internship	Tutorial	CE	ESE	Total	
30	30	0	50	50	100	1 hr. 30 minutes

COURSE OUTCOMES

After the completion of the course, the students will be able to

CO No.	Expected Outcome	Learning Domains
CO1	Understand the concept of First aid and emergency care.	U, R
CO2	Realise the importance of providing first aid.	R
CO3	Understand the emergency management of various systems and structures of human body	U, R, A
CO4	Orient the students towards CPR	R, A

*Remember(R), Understand(U), Apply(A), Analyze (An), Evaluate (E), Create(C), and Synthesis (Sy)

Mapping of Course Outcomes to PSOs

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	✓	✓				
CO2		✓	✓	✓		
CO3	✓	✓	✓	✓		✓
CO4		✓	✓	✓	✓	✓

COURSE CONTENTS

Unit I: First Aid

Hours of transaction: 10

- First Aid and Emergency care -Meaning Definitions
- Principles of first aid - Qualities of a first aider.

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- Content of a first aid kit
- First aid techniques

Unit II Injuries and its managements

Hours of transaction: 15

- Wounds: Types of wounds, small cuts and abrasion, head injury, chest injury, shock and Poisoning
- Fracture, dislocations, sprain, strain and cramps
- Skin burns, heat exhaustion, hypothermia
- Bandages types of bandages- Taping and supports

Unit III Physiological systems

Hours of transaction: 10

- Respiratory system and breathing
- Heart blood circulation
- Nervous system and unconsciousness

Unit IV: Emergency Care

Hours of transaction: 15

- Psychological first aid
- Specific emergency situation and disaster management
- Concept of Resuscitation
- Dealing with an emergency

Unit V: Teacher Specific Mode

Hours of Transaction: 10

Practical work, project and assessment based on the prior learning and modules to be suggested and guided by the respective teacher

REFERENCES

1. Christine, M. D., (1999). *Physiology of sports and exercise*. USA: Human Kinetics.
2. Conley, M. (2000). *Bioenergetics of exercise training*. In T.R. Baechle, & R.W. Earle, (Eds.), *Essentials of Strength Training and Conditioning* (pp. 73-90). Champaign, IL: Human Kinetics.
3. David, R. M. (2005). *Drugs in sports*, (4th Ed). Routledge Taylor and Francis Group.
4. Dr. S.P. Agarwal (2016). *Indian first aid manual*. Indian red cross society.
5. Gina M.Piazza (2014). *First aid manual*. Dorling Kindersley limited publishers.
6. Jeyaprakash, C. S., *Sports Medicine*, J.P. Brothers Pub., New Delhi, 2003. Khanna, G. L., (1990). *Exercise physiology & sports medicine*. Delhi: Lucky Enterprises.
7. LC Gupta (2003). *Manual of first aid*. JAYPEE publishers.
8. Linda young Landesman. (2016). *first aid and emergency*. Medtech Publishers.
9. Mathew, D. K. & Fox, E. L, (1971). *Physiological basis of physical education and athletics*. Philadelphia: W.B. Saunders Co.

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ASSESSMENT RUBRICS

Evaluation Type		Marks
End Semester Evaluation		50
Continuous Evaluation		50
a)	Test Paper- 1 (Written/Oral)	10
b)	Test Paper-2 (Written/Oral)	10
c)	Assignment Seminar Record Viva-Voce Any other relevant mode of evaluation	(Any three- each for 10 marks) 10 X 3 = 30 Marks
Total		100

SKILL ENHANCEMENT COURSE

KU5SECPES103 : PHYSICAL LITERACY AND FUNDAMENTAL MOVEMENT SKILLS

Semester	Course Type	Course Level	Course Code	Credits	Total Hours
5	SEC	100	KU5SECPES103	3	60

Learning Approach (Hours/ Week)			Marks Distribution			Duration of ESE (Hours)
Lecture	Practical/ Internship	Tutorial	CE	ESE	Total	
30	30	0	50	50	100	1 hr. 30 minutes

Course Description

The course aims to develop an understanding of physical literacy and its relevance to physical activity and sports, and to develop and prepare modules for the development of fundamental physical skills for students of different age groups

COURSE OUTCOMES

After the completion of the course, the students will be able to

CO No.	Expected Outcome	Learning Domains
CO1	Understand the fundamentals of physical literacy	U, R
CO2	Develop basic understanding for developing FMS, locomotor skills, and object control skills	U, R, A
CO3	Develop fundamental movement skills for different categories	U, R
CO4	Implement and evaluate fundamental movement skills to young children	R, A, AN, C

***Remember(R), Understand(U), Apply(A), Analyze (An), Evaluate (E), Create(C), and Synthesis (Sy)**

Mapping of Course Outcomes to PSOs

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	✓	✓	✓	✓		
CO2	✓	✓	✓		✓	

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C03	✓	✓	✓	✓		
C04	✓	✓	✓		✓	

COURSE CONTENTS

Module 1: Introduction to Physical Literacy : **Hours of transaction: 10**

1.1 Concept of physical literacy

- Definition, significance, and components of physical literacy
- Past present and future perspectives of physical literacy
- Understanding the terminologies (Physical activity, play, exercise, recreation sport, and game)

1.2: Importance of Physical Activity and Health

- Benefits of regular physical activity
- Guidelines for physical activity participation
- Barriers to physical activity and strategies for overcoming them
- Role of physical activity in disease prevention and management

Suggested readings specific to the Module

1.1 Elizabeth Durden-Myers(2018) Physical Literacy: A Guide for Educators

1.2 Heather Gardner (2017) Physical Literacy on the Move: Games for Developing Confidence and Competence in Physical Activity

1.3 McLennan, Nancy, Thompson, Jannine (2015) Quality Physical Education (QPE): Guidelines for Policy Makers

1.4 Istvan Balyi, Richard Way, Colin Higgs (2013) Long-Term Athlete Development

Module 2: Fundamental Movement Skills : **Hours of transaction: 15**

2.1 Locomotor Skills

- Walking, running, jumping, hopping, galloping

2.2 Non-locomotor skills

- Bending, twisting, stretching, swaying

2.3 Manipulative or Object Control Skills

- throwing, catching, kicking, striking)

2.4 Body Management Skills and Balance Skills

- Body awareness, body alignment, space awareness, coordination and balance

2.5 Techniques and progressions for developing locomotor and non-locomotor skills

Suggested readings specific to the Module

2.1 Nancy Francis, Ashley Johnson, Meghann Lloyd (2011) Educator's Guide to Teaching Fundamental Movement Skills

2.2 A. Vonnie Colvin, Nancy J. Egner Markos, Pamela J. Walker (2022) Teaching Fundamental Motor Skills

2.3 Krystina Castella (2018) Designing for Kids: Creating for Playing, Learning, and Growing

2.4 Krystina Castella (2018) Designing for Kids: Creating for Playing, Learning, and Growing

Module 3 FMS & LTAD : **Hours of transaction: 15**

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3.1 Concept of Fundamental Movement Skills (FMS)

- ABCS of Movement
- Influence of FMS in Sports Skills

3.2 Adapting Fundamental Movement Skills

- Developing FMS for different age groups
- Customise FMS modules for differently abled students

3.3 LTAD concepts

- Features and key factors in LTAD
- Stages of LTAD

3.1 Allen William Burton, Daryl E. Miller (1998) Movement Skill Assessment

3.2 Donna Joy Cech, Suzanne Tink Martin (2011) Functional Movement Development Across the Life Span

3.3 David Joyce, Daniel Lewindon (2014) High-performance Training for Sports

3.4 Gray Cook (2011) Movement Functional Movement Systems: Screening, Assessment and Corrective Strategies

Module 4 Implementing FMS training : Hours of transaction: 10

4.1 Preparing activities and lesson plans based on FMS

4.2 Project work based on kindergarten/school kids

4.3 Report presentation of FMS project

Suggested readings specific to the Module

4.1 Krystina Castella (2018) Designing for Kids: Creating for Playing, Learning, and Growing

4.2 Gray Cook (2011) Movement Functional Movement Systems: Screening,

Module 5 : Teacher Specific Module : Hours of transaction: 10

Practical work, project and assessment based on the prior learning and modules to be suggested and guided by the respective teacher

Core Compulsory Reading

- Frances Cleland Donnelly, Suzanne S. Mueller, David L. Gallahue (2016) Developmental Physical Education for All Children Theory Into Practice
- Nancy Francis, Ashley Johnson, Meghann Lloyd (2011) Educator's Guide to Teaching Fundamental Movement Skills
- Vonnie Colvin, Nancy J. Egnor Markos, Pamela J. Walker (2022) Teaching Fundamental Motor Skills
- Krystina Castella (2018) Designing for Kids: Creating for Playing, Learning, and Growing

Core Suggested Readings

- Australia, S. (2021, May 22). Physical literacy. Retrieved from https://www.sportaus.gov.au/https://www.sportaus.gov.au/physical_literacy
- Clements, R. L., & Schneider, S. L. (2017). Moving with words & actions: Physical literacy

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ASSESSMENT RUBRICS

Evaluation Type		Marks
End Semester Evaluation		50
Continuous Evaluation		50
a)	Test Paper- 1 (Written/Oral)	10
b)	Test Paper-2 (Written/Oral)	10
c)	Assignment Seminar Record Viva-Voce Any other relevant mode of evaluation	(Any three-each for 10 marks) 10 X 3 = 30 Marks
Total		100

SKILL ENHANCEMENT COURSE

KU6SECPES104: TESTING IN FITNESS

Semester	Course Type	Course Level	Course Code	Credits	Total Hours
5	SEC	100	KU6SECPES104	3	60

Learning Approach (Hours/ Week)			Marks Distribution			Duration of ESE (Hours)
Lecture	Practical/ Internship	Tutorial	CE	ESE	Total	
30	30	0	50	50	100	1 hr. 30 minutes

Lecture/Tutorials, P=Practical, CE =Continuous Evaluation, ESE = End Semester Evaluation

Course Description

This course provides a comprehensive introduction to fitness testing methodologies, assessment protocols, and practical applications. Through a blend of theoretical knowledge and hands-on experiences, students will develop the skills necessary to conduct accurate fitness assessments.

COURSE OUTCOMES

After the completion of the course, the students will be able to:

CO No.	Expected Outcome	Learning Domains
CO1	Develop foundation skills in administering and interpreting fitness assessments and understand the significance of fitness testing in health and performance.	U, R
CO2	Identify and describe key components of fitness, including cardiovascular endurance, muscular strength, flexibility, and body composition	U, R, An
CO3	Explore various fitness testing protocols and procedures.	U
CO4	Understand how to adapt fitness programs for diverse populations, including special considerations for age, fitness level, and health conditions	U, R, A, C

***Remember(R), Understand(U), Apply(A), Analyze (An), Evaluate (E), Create(C), and Synthesis (Sy)**

Mapping of Course Outcomes to PSOs						
	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	✓	✓	✓			
CO2	✓	✓	✓	✓	✓	
CO3		✓	✓	✓	✓	
CO4	✓	✓	✓		✓	✓

COURSE CONTENTS

Module 1: Introduction to Fitness

Hours of transaction: 10

- Definition of fitness and its importance. Classification of fitness components
- Definition and importance of Health-related physical fitness: Cardiovascular endurance, muscular strength, muscular endurance, flexibility, and body composition
- Definition and importance of skill-related fitness agility, balance, coordination, power, reaction time, and speed
- Overview of Fitness Testing in Physical Education
- Importance of Fitness Assessment in Health and Performance
- Key Principles and Ethics in Fitness Testing

Suggested reading

- 1.1 Barron, H. M., & Mchee, R. (1997). A practical approach to measurement in physical education. Philadelphia: Lea and Febiger.
- 1.2 Kansal, D.K. (1996). Test and measurement in sports and physical education. New Delhi: D.V.S. Publications
- 1.3 Barrow H.M. and McGee R. (1979). A Practical Approach to Measurement in Physical Education. Lea & Febiger, Philadelphia. U.S.A.

Module 2: Assessment of health-related physical fitness

Hours of transaction: 15

- **Cardiovascular Fitness Assessment:**
Common Tests: Harward step test, Beep test & Cooper run or walk.
Interpreting Cardiovascular Fitness Results
- **Assessment for strength:**
Tests for strength assessments (Tests: 1-RM, hand grip, Pullup /flexed arm hanging, Push-Up, Sit-Up)
Safety Measures in Muscular Strength Testing & interpreting and Reporting Results
- **Assessment for flexibility:**
Common Tests: Sit and Reach, Goniometry
Addressing Individual Differences in Flexibility

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Interpreting Flexibility Test Result

- **Body Composition Assessment:**

Body Composition Testing Methods: Skinfold&Interpreting Body Composition Data

Suggested reading for the module

- 2.1 Barron, H. M., &Mchee, R. (1997). A practical approach to measurement in physical education.Philadelphia: Lea and Febiger.
- 2.2 Kansal, D.K. (1996). Test and measurement in sports and physical education. New Delhi:D.V.S. Publications.
- 2.3 Kansal DK (2012).A practical approach to Measurement Evaluation in Physical Education &Sports selection. Sports & Spiritual Science Publications, New Delhi.

Module 3 Assessment for skill-related physical fitness

Hours of transaction: 15

- Understanding the importance of skill-related components in overall physical fitness.
- Recognizing the role of agility, balance, coordination, power, reaction time, and speed in athletic performance.
- Agility - Illinois agility test:Setting up the course and proper execution and Analysis of performance data and interpretation.
- Coordination – Alternate hand wall toss test
- Reaction time - Ruler drop test: Execution, scoring, and averaging. Practical considerations for accurate testing.
- Balance - Standing stork test
- Power - Vertical jump test :Measurement techniques and marking procedures. Calculating and interpreting scores.
- Speed - 50-metre sprint test: Marking and timing accuracy. Analysis of sprint performance data.

Suggested reading for the module

- 3.1 ACSM (2001). Guidelines for Exercise Testing and Prescription by American College of Sports Medicine Human Kinetics USA.
- 3.2 Sharma JP (2006). Test and measurements in physical education. khel sahitya. Delhi.
- 3.3 Tritschler K. Barrow &McGee"s (2000). Practical Measurement and Assessment. Lippincott Williams & Wilkins. Philadelphia. U.S.A.

Module 4: Fitness Test Protocols

Hours of transaction: 10

- Selection Criteria for Fitness Tests
- Administration Guidelines and Standardization
- Professional Standards in Fitness Testing
- Role of Technology in Fitness Assessment
- Future Trends in Fitness Testing Technology

Module 5 : Teacher Specific Module

Hours of transaction: 10

Practical work, project and assessment based on the prior learning and modules to be suggested and guided by the respective teacher

Suggested reading for the module

- 4.1 Barron, H. M., & Mchee, R. (1997). A practical approach to measurement in physical education. Philadelphia: Lea and Febiger.
- 4.2 Kansal, D.K. (1996). Test and measurement in sports and physical education. New Delhi: D.V.S. Publications
- 4.3 ACSM (2001). Guidelines for Exercise Testing and Prescription by American College of Sports Medicine Human Kinetics USA.

Core Compulsory readings

1. Barron, H. M., & Mchee, R. (1997). A practical approach to measurement in physical education. Philadelphia: Lea and Febiger.
2. Kansal, D.K. (1996). Test and measurement in sports and physical education. New Delhi: D.V.S. Publications
3. Kansal, D.K. (1996). Test and measurement in sports and physical education. New Delhi: D.V.S. Publications
4. ACSM (2001). Guidelines for Exercise Testing and Prescription by American College of Sports Medicine Human Kinetics USA.

Core suggested reading

1. Barrow H.M. and McGee R. (1979). A Practical Approach to Measurement in Physical Education. Lea & Febiger, Philadelphia. U.S.A.
2. Baumgartner TA Jackson AS Mahar MT and Rowe DA (2007). Measurement for Evaluation in Physical Education. The McGraw Hill Companies. Inc. New York. USA

TEACHING LEARNING STRATEGIES

- The class will be taught by using lectures and demonstrations, seminars, classroom discussions, videos, charts, and presentation methods.

MODE OF TRANSACTION

- Lecture//Laboratory Work/ Field Work/ Outreach Activities/ Project Work/ Vocational Training/Viva/ Seminars/ Term Papers/Assignments/ Presentations/ Self-Study etc.

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ASSESSMENT RUBRICS

Evaluation Type		Marks
End Semester Evaluation		50
Continuous Evaluation		50
a)	Test Paper- 1 (Written/Oral)	10
b)	Test Paper-2 (Written/Oral)	10
c)	Assignment Seminar Record Viva-Voce Any other relevant mode of evaluation	(Any three- each for 10 marks) 10 X 3 = 30 Marks
Total		100

SKILL ENHANCEMENT COURSE

KU6SECPES201: MASSAGE AND MYOFASCIAL RELEASE

Semester	Course Type	Course Level	Course Code	Credits	Total Hours
6	SEC	200	KU6SECPES201	3	60

Learning Approach (Hours/ Week)			Marks Distribution			Duration of ESE (Hours)
Lecture	Practical/ Internship	Tutorial	CE	ESE	Total	
30	30	0	50	50	100	1 hr. 30 minutes

Course Pre- requisite: Completed at least two courses DSC courses in Physical Education and Sports Sciences, including courses in Anatomy/Physiology and Human Sciences/Kinesiology at 200 level.

Course Description

This course will enable students to understand the basic skills of understand the myofascial release modalities. It aims to develop understanding about Identify the muscle attachments: origin

and insertion and identify the muscle trigger points and muscle knots

COURSE OUTCOMES

After the completion of the course, the students will be able to

CO No.	Expected Outcome	Learning Domains
CO1	Identify the muscle attachments: origin and insertion	U, R
CO2	Understand the myofascial release modalities	U, R, A
CO3	Identify the muscle trigger points and muscle knots	U, A,
CO4	Apply the knowledge of myofascial release for enhancing functional movement patterns	R, A, AN

***Remember(R), Understand(U), Apply(A), Analyze (An), Evaluate (E), Create(C), and Synthesis (Sy)**

Mapping of Course Outcomes to PSOs

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	✓	✓	✓	✓		

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C02	✓	✓			✓	
C03	✓	✓	✓	✓		
C04	✓	✓	✓		✓	

COURSE CONTENTS

Module 1 : Introduction to Massage

Hours of transaction: 10

- 1.1 Introduction to massage
- 1.2 Types of massage
- 1.3 Massaging techniques
- 1.4 Principles of massaging

Suggested reading Specific to the Module

- 1.1 Christine, M. D., (1999). *Physiology of sports and exercise. USA: Human Kinetics.*
- 1.2 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.*
- 1.3 David, R. M. (2005). *Drugs in sports, (4th Ed). Routledge Taylor and Francis Group.*

Module 2 : Muscle Anatomy

Hours of transaction: 10

- 2.1 Anatomy of Muscle
- 2.2 Skeletal Muscle and Fascia
- 2.3 Types of Muscles
- 2.4 Muscular attachments: insertion, origin

Suggested reading Specific to the Module

- 2.1 Thomas Myers, James Earls · (2017)*Fascial Release for Structural Balance, Revised Edition ISBN:9781623171018, 1623171016. Publisher:North Atlantic Books.*
- 2.2 Christine, M. D., (1999). *Physiology of sports and exercise. USA: Human Kinetics.*
- 2.3 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.*

Module 3 : Trigger Points and Myofascial modalities

Hours of transaction: 15

- 3.1 Trigger points and muscle knots
- 3.2 Myofascial release
- 3.3 Myofascial release modalities
- 3.4 Myofascial release tools

Suggested readings specific to the Module

- 1.1 Mathew, D. K. & Fox, E. L, (1971). *Physiological basis of physical education and athletics. Philadelphia: W.B. Saunders Co.*
- 1.2 Pandey, P. K., (1987). *Outline of sports medicine, New Delhi: J.P. Brothers Pub.*

Syllabus – Five-Year Integrated Master of Physical Education and Sports.

1.3 Williams, J. G. P. (1962). *Sports medicine*. London: Edward Arnold Ltd.

Module 4: Trigger Points and Myofascial modalities

Hours of transaction: 20

- 4.1 Using tools for myofascial release
- 4.2 Principles of Postural analysis
- 4.3 Palpating skills and use of myofascial therapy for enhancing functional movement.

Suggested readings specific to the Module

- 4.1 Anders Jelvéus · (2011) *Integrated Sports Massage Therapy E-Book A Comprehensive Handbook*. ISBN:9780702049057, 0702049050. Publisher:Elsevier Health Sciences.
- 4.2 Thomas Myers, James Earls (2017)*Fascial Release for Structural Balance, Revised Edition* ISBN:9781623171018, 1623171016. Publisher:North Atlantic Books.
- 4.3 Pandey, P. K., (1987). *Outline of sports medicine*, New Delhi: J.P. Brothers Pub.

Module 4: Teacher Specific Module

Hours of transaction: 5

Application of myofascial release in practical situations (five skills)

Core Compulsory reading

- Anders Jelvéus · (2011) *Integrated Sports Massage Therapy E-Book A Comprehensive Handbook*. ISBN:9780702049057, 0702049050. Publisher:Elsevier Health Sciences.
- Lisa A. DeStefano · (2011) *Greenman's Principles of Manual Medicine*. ISBN:9780781789158, 078178915X. Publisher:Lippincott Williams & Wilkins/Wolters Kluwer
- Thomas Myers, James Earls · (2017)*Fascial Release for Structural Balance, Revised Edition* ISBN:9781623171018, 1623171016. Publisher:North Atlantic Books
- Christine, M. D., (1999). *Physiology of sports and exercise*. USA: Human Kinetics.
- 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.
- David, R. M. (2005). *Drugs in sports*, (4th Ed). Routledge Taylor and Francis Group.
- Mathew, D. K. & Fox, E. L, (1971). *Physiological basis of physical education and athletics*. Philadelphia: W.B. Saunders Co.
- 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.

Core suggested readings

- Anders Jelvéus (2011) *Integrated Sports Massage Therapy E-Book A Comprehensive Handbook*. ISBN:9780702049057, 0702049050. Publisher:Elsevier Health Sciences.
- Lisa A. DeStefano (2011) *Greenman's Principles of Manual Medicine*. ISBN:9780781789158, 078178915X. Publisher:Lippincott Williams & Wilkins/Wolters Kluwer
- Thomas Myers, James Earls (2017)*Fascial Release for Structural Balance, Revised Edition* ISBN:9781623171018, 1623171016. Publisher:North Atlantic Books

Syllabus – Five-Year Integrated Master of Physical Education and Sports.

- *James Earls, Thomas W. Myers (LMT.) (2010) Fascial Release for Structural Balance ISBN:9781556439377, 1556439377. Publisher:Lotus Pub.*

TEACHING LEARNING STRATEGIES

- The class will be taught by using lectures and demonstrations, seminars, classroom discussion, videos, charts and presentations method.

MODE OF TRANSACTION

- Lecture//Laboratory Work/ Field Work/ Outreach Activities/ Project Work/ Vocational Training/Viva/ Seminars/ Term Papers/Assignments/ Presentations/ Self-Study etc

ASSESSMENT RUBRICS

Evaluation Type		Marks
End Semester Evaluation		50
Continuous Evaluation		50
a)	Test Paper- 1 (Written/Oral)	10
b)	Test Paper-2 (Written/Oral)	10
c)	Assignment Seminar Record Viva-Voce Any other relevant mode of evaluation	(Any three- each for 10 marks) 10 X 3 = 30 Marks
Total		100

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VALUE ADDED COURSE

KU3VACPES101: YOGA FOR HEALTH

Semester	Course Type	Course Level	Course Code	Credits	Total Hours
3	SEC	200	KU3VACPES101	3	60

Learning Approach (Hours/ Week)			Marks Distribution			Duration of ESE (Hours)
Lecture	Practical/ Internship	Tutorial	CE	ESE	Total	
30	30	0	50	50	100	1 hr. 30 minutes

Lecture/Tutorials, P/I-Practical/Internship, CE-Continuous Evaluation, ESE= End Semester Evaluation

Course Description

The course will introduce students to different Yog asanas, relating yoga to overall health, and with realization of how Yoga practice can be applied beneficially to everyday life

COURSE LEARNING OUTCOMES

After completing this course, the students will be able to

CO No.	Expected Outcome	Learning Domains
CO1	Analyze the various stages of Ashtanga yoga.	U, A
CO2	Understand the basic concepts of health and fitness.	U, R
CO3	Demonstrate the different asanas, pranayama's, relaxation techniques and kriyas.	R, A,
CO4	Understand the benefits of yoga and application in daily life.	U, R, A

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	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	✓	✓	✓	✓			
CO2	✓	✓	✓	✓			
CO3		✓	✓	✓		✓	
CO4			✓	✓	✓	✓	✓
Mapping of Course Outcomes to PSOs							

COURSE CONTENTS

Module 1: Introduction of Yoga

Hours of transaction: 10

- Meaning and Definitions of Yoga.
- Concept of yogic practices.
- Types of yoga (Karma yoga, Raja yoga, Bakthi yoga and Jnana yoga).
- Stages of Ashtanga yoga (Yama, Niyama, Asana, Pranayama, Pratyahara, Dharana, Dhyana, Samadhi).

Module 2: Asana, Pranayama, Bandhas and Mudras

Hours of transaction:

20

- Asanas and its classifications.
- Pranayama- meaning and classifications.
- Meaning and types of Bandhas.
- Meaning and types of Mudras.

Module 3: Health and Fitness

Hours of transaction: 10

- Concept of fitness and wellness.
- Components of fitness and wellness.
- Physical activity and health benefits.
- Modern lifestyle and hypo kinetic diseases, prevention and its management.

Module 4: Health and yoga

Hours of transaction: 10

- Concept of yogic cleansing processes (Shad kriyas).
- Yogic diet.
- Effects of asanas and pranayama's on various systems of the body.
- Relaxation techniques in yoga.

Syllabus – Five-Year Integrated Master of Physical Education and Sports.

Module 5: Teacher Specific Module

Hours of transaction:

10

- Surya Namaskara.
- Asanas
- Pranayama
- IRT

TEACHING LEARNING STRATEGIES

The content of the syllabus may be taught by using lecture method, discussion method, quiz method, educational videos, charts and assignment method depending upon the resources and Facilities available at the University/Institute/ Department/Colleges.

MODE OF TRANSACTION

- Lecture/Discussions/Fieldwork/Project Work/Viva/Seminars/Term Papers/ Presentations/ Self
- Learning Instructional Material etc.

SUGGESTED READINGS

1. Aurobindo. (1974). *Lights on Yoga*-Aurobindo Ashramam,
2. Brown, F. Y. (2000). *How to use yoga*. Delhi Sports Publication.
3. Shankar, G. (1998). *Holistic approach of yoga*. New Delhi Aditya Publishers.
4. Shekar, K. C. (2003). *Yoga for health*. Delhi. Khel Sahitya Kendra Publishers.

ASSESSMENT RUBRICS

Evaluation Type		Marks
End Semester Evaluation		50
Continuous Evaluation		50
a)	Test Paper- 1 (Written/Oral)	10
b)	Test Paper-2 (Written/Oral)	10
c)	Assignment Seminar Record Viva-Voce Any other relevant mode of evaluation	(Any three-each for 10 marks) 10 X 3 = 30 Marks
Total		100

VALUE ADDED COURSE

Semester	Course Type	Course Level	Course Code	Credits	Total Hours
3	SEC	200	KU3VACPES102	3	45

Learning Approach (Hours/ Week)			Marks Distribution			Duration of ESE (Hours)
Lecture	Practical/ Internship	Tutorial	CE	ESE	Total	
45	0	0	50	50	100	1 hr. 30 minutes

KU3VACPES102: HEALTH AND WELLNESS

Lecture/Tutorials, P=Practical, CE =Continuous Evaluation, ESE = End Semester Evaluation

COURSE LEARNING OUTCOMES

After completing this course, the students will be able to

CO No.	Expected Outcome	Learning Domains
CO1	Understand the basic concepts of health, fitness and wellness	U, A
CO2	Understand the relationship of fitness to health with understanding of health implications of body weight and nutrition	U, R
CO3	Understand the concept of nutrition, nutritional guidelines and balanced diet	R, A,
CO4	Relate health and fitness to ageing, stress and mental hygiene	U, R, A

Mapping of Course Outcomes to PSOs

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	✓	✓	✓	✓		
CO2	✓	✓			✓	
CO3	✓	✓	✓	✓		
CO4	✓	✓	✓		✓	

COURSE CONTENTS

Module 1: Health, Physical fitness and Wellness

Hours of transaction: 10

- Meaning and definitions of Health, Dimensions of health
- Basic concept wellness and components of wellness
- Role of various factors in wellness, living a healthy life style and
- Concept of Fitness – Meaning and definitions of fitness, different types of physical fitness

Module 2: Fitness and Health

Hours of transaction: 10

- Relationship between fitness and health
- Concepts of body weight and Assessment of body composition.
- Over weight and Obesity and their health implications.
- Factors contributing to excess body fat and Approaches to overcome weight problem.

Module 3: Nutrition

Hours of transaction: 10

- Basic Concepts in nutrition.
- Nutritional requirements and components of a healthy diet.
- Nutritional Guidelines and Balanced diet.
- Optimal nutrition for exercise, Energy value of different important foods and fluid replacement before, during and after exercise.

Module 4: Exercise and Aging

Hours of transaction: 10

- Aging and cardiovascular health; Risk factors for cardiovascular disease.
- Stress-meaning and types: Physical Stress- Harmful effects of overtraining and excessive exercise on health, mental stress and painful effects of mental stress on health.
- Stress relief through exercise and stress management protocols.
- Brief concept of safety education and first aid, principles of mental hygiene; effects of smoking, alcoholism and drugs

Module 5: Teacher Specific Course

Hours of transaction:

05

Practical work, project and assessment based on the prior learning and modules to be suggested and guided by the respective teacher

TEACHING LEARNING STRATEGIES

The content of the syllabus may be taught by using lecture method, discussion method, quiz method, educational videos charts and assignment method depending upon the resources and facilities available at the University/Institute/ Department/Colleges.

MODE OF TRANSACTION

Lecture/Project Work/Viva/Seminars/Term Papers/Presentations/Self- Learning Instructional Material etc

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REFERENCES

1. Arthar, C. Guyton. (1972). *Physiology of Human Body*, Philadelphia: Saunders Company.
2. Bradfird B, Strand and Others. (1997). *Fitness Education*, Arizona Gorsuch Seani; brick Publishers,
3. Melwin, H. Williams. (1995). *Nutrition for Health Fitness and sport*. McGraw Hill Company, Newyork:
4. Park, K. (2005). *Text Book of Preventive and Social Medicine*. Westland Publishers
5. Scott, K. Powers., & Stephen, L., Dodd. (1999). *Total Fitness: Exercise, Nutrition and wellness*, Boston: Allyn and Bacon.
6. Srilakshmi, B. (2008). *Nutrition science*. New Age International Publishers.
7. William D McArdle, Frank I Katch and Vitor I Katch. (2000). *Essential of Exercise Physiology*, Second edition, New York: Lipincoff Welliams and wilkins

ASSESSMENT RUBRICS

Evaluation Type		Marks
End Semester Evaluation		50
Continuous Evaluation		50
a)	Test Paper- 1 (Written/Oral)	10
b)	Test Paper-2 (Written/Oral)	10
c)	Assignment Seminar Record Viva-Voce Any other relevant mode of evaluation	(Any three- each for 10 marks) 10 X 3 = 30 Marks
Total		100

VALUE ADDED COURSE

KU3VACPES103: NUTRITION AND WEIGHT MANAGEMENT

Semester	Course Type	Course Level	Course Code	Credits	Total Hours
3	SEC	200	KU3VACPES103	3	45

Learning Approach (Hours/ Week)			Marks Distribution			Duration of ESE (Hours)
Lecture	Practical/ Internship	Tutorial	CE	ESE	Total	
45	0	0	50	50	100	1 hr. 30 minutes

Lecture/Tutorials, P/I-Practical/Internship, CE-Continuous Evaluation, ESE= End Semester Evaluation

Course Description

The course will provide knowledge and understanding of food and nutrition, relating to overweight and obesity, orienting students towards the health benefits of weight management. It will also enable

students to gain awareness and competency in preparing diet plan.

COURSE LEARNING OUTCOMES

After completing this course, the students will be able to

CO No.	Expected Outcome	Learning Domains
CO1	Understand the concept of importance of food and nutrition.	U, A
CO2	Understand the health risks factors associated with obesity.	U, R
CO3	Orient the students towards weight management	R, A,
CO4	Prepare diet plan for weight management	R, A, C

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	PO1	PO2	PO3	PO4	PO5	PO6	PO7
C01	✓	✓	✓	✓			
C02		✓	✓	✓			
C03		✓	✓	✓			
C04		✓		✓	✓	✓	✓

Mapping of Course Outcomes to PSOs

COURSE CONTENTS:

Module 1: Introduction to Nutrition

Hours of Transaction : 7

- Meaning and Definitions of Nutrients and Nutrition.
- Concept of Balanced diet.
- Malnutrition and its different forms, RDA– Meaning and Definitions, RDA for different age groups.
- Nutritional classification of foods.

Module 2: Classification of Nutrients

Hours of Transaction : 8

- Carbohydrates, protein and fat- its classification and functions, digestion, absorption and metabolism.
- Vitamins, minerals- its classification and functions.
- Regulation of Water Balance
- Requirement of water

Module 3: Weight Management and Obesity

Hours of Transaction : 10

- Meaning and Theories of weight management
- Concept of BMI (Body mass index) and Factors Influencing BMI
- Calculation of Body mass index and Waist hip Ratio .
- Obesity– Definition, Meaning and types, Health Risks Associated with Obesity, Causes and Solutions for Overcoming Obesity.

Module 4: Weight Management and Exercise

Hours of Transaction : 10

- Calculation of Caloric requirement
- Role of diet and exercise management
- Dieting versus exercise for weight management
- Design a diet plan and exercise schedule for weight gain and loss.

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Module 5: Teacher Specific Module

Hours of Transaction : 10

Module to cover dietary survey / recall, calculation of body indices and preparation of specific dietary plan and exercise schedule for specific population.

TEACHING LEARNING STRATEGIES

The content of the syllabus may be taught by using lecture method, discussion method, quiz method, educational videos charts and assignment method depending upon the resources and facilities available at the University/Institute/ Department/Colleges.

MODE OF TRANSACTION

Lecture/Project Work/Viva/Seminars/Term Papers/Presentations/Self- Learning Instructional Material etc

REFERENCES

1. Gopalan., Ramasasthri, B.V., & Balasubramaniam, S.C. (2007). *Nutritive Value of Indian foods*. Simon Schuster Publishers.
2. Park, K. (2005). *Text Book of Preventive and Social Medicine*. Westland Publishers.
3. Srilakshmi, B. (2008). *Nutrition science*. New Age International Publishers.
4. Swaminadhan, M. (2001). *Nutriton and Dietetics*. The Bangalore Printing and Pub.co.Ltd Bangalore.

ASSESSMENT RUBRICS

Evaluation Type		Marks
End Semester Evaluation		50
Continuous Evaluation		50
a)	Test Paper- 1 (Written/Oral)	10
b)	Test Paper-2 (Written/Oral)	10
c)	Assignment Seminar Record Viva-Voce Any other relevant mode of evaluation	(Any three-each for 10 marks) 10 X 3 = 30 Marks
Total		100

Syllabus – Five-Year Integrated Master of Physical Education and Sports.**VALUE ADDED COURSE****KU4VACPES104– WOMEN HEALTH- GENDER PERSPECTIVES**

Semester	Course Type	Course Level	Course Code	Credits	Total Hours
4	SEC	200	KU4VACPES104	3	45

Learning Approach (Hours/ Week)			Marks Distribution			Duration of ESE (Hours)
Lecture	Practical/ Internship	Tutorial	CE	ESE	Total	
45	0	0	50	50	100	1 hr. 30 minutes

Lecture/Tutorials, P=Practical, CE =Continuous Evaluation, ESE = End Semester Evaluation

Course Description

This course aims to provide an in-depth understanding of various aspects of women's health, including physiological, psychological, and socio-cultural factors affecting women across the lifespan. It covers a range of topics from Women health issues, Women's health across the lifespan, Mental Health, Health care plans and other factors in shaping women's health outcomes.

Course Outcome

After completing this course, the students will be able to

CO No.	Expected Outcome	Learning Domains
CO1	Understand health issues related to women.	U, A
CO2	Understand different types of disorders due to malnutrition and gynecological problems among women	U, R
CO3	Become aware about health care plans to prevent lifestyle disorders	R, A,
CO4	Gain knowledge of developing diet plans and exercise routines for women	R, A, C

Mapping of Course Outcomes to PSOs

	PSO1	PSO2	PSO3	PSO4	PSO5	PO6	PSO7
CO1	√	√	√				
CO2		√	√	√			
CO3		√	√	√			
CO4		√		√	√	√	√

COURSE CONTENTS

Module 1: Introduction to women health

Hours of transaction:10

- 1.1 Structural and Physiological differences
- 1.2 Women health issues (Underweight, anemia, poor or insufficient sleep and diet, overweight, obesity, thyroid, osteoporosis, poor hygiene)
- 1.3 Gynecological problems of women (PCOD, menstrual disorders, early childbearing, multiple and frequent pregnancy, menopause)
- 1.4 Biological, geographical and social factors on women health

Suggested readings specific to the module

- 1.1 British Medical Association. Philosophy and Practice of Medical Ethics. London: British Medical Association. 1988.
- 1.2 Fee E & Krieger N (eds). Women’s Health, Politics, And Power: Essays on Sex/Gender, Medicine, And Public Health. New York: Baywood Publishing. 1994.
- 1.3 Hunt L. The women’s health speciality: curriculum implications. Women’s Health Issues. 7(2): March/April 1997: 116-120.
- 1.4 Kettel B. Women health and the environment. Social Science and Medicine. 1996;42:1367–1379

Module 2: Women’s health across the lifespan

Hours of transaction:10

- 2.1 Adolescence and early adulthood
- 2.2 Reproductive age
- 2.3 Middle age and menopause
- 2.4 Elder Women

Suggested readings specific to the module

- 2.1 World Health Organization (WHO) Women and health report. Author; Geneva, Switzerland: 2009. (Google Scholar)
- 2.2 Correa-de-Araujo R. Serious gaps: How the lack of sex/gender-based research impairs health. Journal of Women’s Health. 2006;15:1116–1122.
- 2.3 Norwegian Board of Health. Women’s Health in Norway. Oslo. 1995.

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2.4 Kettel B. Women health and the environment. Social Science and Medicine. 1996;42:1367–1379

Module 3: Mental Health

Hours of transaction:10

- 3.1 Depression and anxiety
- 3.2 Eating disorders
- 3.3 Trauma and PTSD
- 3.4 Postpartum depression

Suggested readings specific to the module

- 3.1 Norwegian Board of Health. Women's Health in Norway. Oslo. 1995.
- 3.2 W.Larry Kenney, Jack H. Wilmore, Devid L.Costil.(2015). Physiology of Sports and Exercise, Second Edition. USA.Human Kinetics.
- 3.3 Hunt L. The women's health speciality: curriculum implications. Women's Health Issues. 7(2): March/April 1997: 116-120.
- 3.4 Kettel B. Women health and the environment. Social Science and Medicine. 1996;42:1367–1379

Module 4: Health care plans

Hours of transaction:10

- 4.1 Health education in their own language
- 4.2 Health promotion programmes
- 4.3 Dietary plans
- 4.4 How to start and stick on exercise

Module 5: Teacher Specific Module

Hours of transaction: 05

Practical work, project and assessment based on the prior learning and modules to be suggested and guided by the respective teacher

Suggested readings specific to the module.

- 4.1 World Health Organization (WHO) Women and health report. Author; Geneva, Switzerland: 2009. (Google Scholar)
- 4.2 United Nations (UN) UN women. Author; New York, NY: 2011. Entity for gender equality and the empowerment of women. Retrieved from <http://www.unwomen.org/about-us/about-un-women>
- 4.3 W.Larry Kenney, Jack H. Wilmore, Devid L.Costil.(2015). Physiology of Sports and Exercise, Second Edition. USA.Human Kinetics.
- 4.4 Grown C, Gupta GR, Pande R. Taking action to improve women's health through gender equality and women's empowerment. Lancet. 2005;365(9458):541–543.

Core Compulsory Readings

1. Hunt L. The women's health speciality: curriculum implications. Women's Health Issues. 7(2): March/April 1997: 116-120.
2. Kettel B. Women health and the environment. Social Science and Medicine. 1996;42:1367–1379

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3. World Health Organization (WHO) Women and health report. Author; Geneva, Switzerland: 2009. (Google Scholar)

Core Suggested Readings

1. Women's Health Outcomes Framework Women and violence. Newsletter. 2002 Jan;3 (Google Scholar)
2. Fee E & Krieger N (eds). Women's Health, Politics, and Power: Essays on Sex/Gender, Medicine, And Public Health New York: Baywood Publishing. 1994.
3. Lavin AT. Creating an agenda for school-based health promotion: A review of 25 selected reports. Journal of School Health. 1992;62(6):212–228.

TEACHING LEARNING STRATEGIES

- The class will be taught by using lectures and demonstration, seminars, classroom discussion, videos, charts and presentations method.

MODE OF TRANSACTION

- Lecture//Laboratory Work/ Field Work/ Outreach Activities/ Project Work/ Vocational Training/Viva/ Seminars/ Term Papers/Assignments/ Presentations/ Self-Study etc

ASSESSMENT RUBRICS

Evaluation Type		Marks
End Semester Evaluation		50
Continuous Evaluation		50
a)	Test Paper- 1 (Written/Oral)	10
b)	Test Paper-2 (Written/Oral)	10
c)	Assignment Seminar Record Viva-Voce Any other relevant mode of evaluation	(Any three- each for 10 marks) 10 X 3 = 30 Marks
Total		100

Sample Questions to test Outcomes.

1. What are the common menstrual disorders?
2. Explain the prevalence and risk factors associated with depression and anxiety disorders in women
3. Analyze the impact of socio-economic disparities on women's
4. Discuss the environmental factors that pose health risks specifically to women

VALUE ADDED COURSE**KU6VACPES105: HYGIENE AND HEALTHY LIFESTYLE**

Semester	Course Type	Course Level	Course Code	Credits	Total Hours
6	VAC	100	KU6VACPES105	3	45

Learning Approach (Hours/ Week)			Marks Distribution			Duration of ESE (Hours)
Lecture	Practical/ Internship	Tutorial	CE	ESE	Total	
45	0	0	50	50	100	1 hr. 30 minutes

Lecture/Tutorials, P=Practical, CE =Continuous Evaluation, ESE = End Semester Evaluation

Course Description

The course is intended to provide a learning experience for students to realize how to maintain hygienic practices which can contribute to successful health and fitness goals

Course Outcome

After completing this course, the students will be able to

CO No.	Expected Outcome	Learning Domains
CO1	Understand the significance of hygienic lifestyle habits in achieving overall well-being.	U, A
CO2	Identify key components of effective sleep hygiene and its impact on health.	U, R
CO3	Develop safe and clean habits for personal care, exercise, nutrition and sleep	R, A,
CO4	Provide guidance on establishing regular hygiene Practices and sleep schedules for different fitness levels and life style.	R, A, C

Mapping of Course Outcomes to PSOs							
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	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7
CO1	√	√	√				
CO2		√	√	√			
CO3		√	√	√			
CO4		√		√	√	√	√

COURSE CONTENTS

Module 1 : Understanding the concept of healthy life style Hours of transaction: 8

- 1.1 Introduction to the concept of healthy Lifestyle Habits
- 1.2 Components of a balanced and healthy lifestyle
- 1.3 Importance of hygiene in health and fitness.
- 1.4 Overview of common hygiene-related illnesses and their prevention.

Suggested reading Specific to the Module

1.1 Miller, E. D. (2021). Living in Balance: A Holistic Approach to Health and Well-being. McGraw-Hill Education.

1.2 Roberts, P. H. (2020). Clean and Fit: The Role of Hygiene in Maintaining Health and Fitness. Health Press.

Module 2: Concept of Sleep Hygiene Hours of transaction: 7

- 2.1 Importance of sleep Hygiene for Optimal healthy life
- 2.2 Sleep requirements for different age groups
- 2.3 Sleep Hygiene Practices and establishing a regular sleep schedule
- 2.4 Importance of winding down before sleep

Suggested reading Specific to the Module

2.1 Carskadon, M. A. (2002). Encyclopedia of Sleep and Dreaming. Macmillan.

2.2 Kryger, M. H., Roth, T., & Dement, W. C. (2017). Principles and Practice of Sleep Medicine. Elsevier.

Module 3. Hygiene Practices for Health and Fitness Hours of transaction: 10

- 3.1 Personal Hygiene Practices for Health and Fitness
- 3.2 Nutritional Hygiene and Food Safety
- 3.3 Exercise Hygiene and Hygiene Practices during Fitness Routines
- 3.4 Environmental Hygiene and Fitness Facilities

Suggested reading Specific to the Module

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3.1 Smith, T. (2020). Clean Eating Simplified: A Comprehensive Guide to Nutritional Hygiene. Healthy Living Press.

3.2 Roberts, P. H. (2020). Clean and Fit: The Role of Hygiene in Maintaining Health and Fitness. Health Press.

Module 4: Establishing hygiene habits for different fitness levels and Lifestyles

Hours of transaction: 15

4.1 Developing a Sustainable Hygienic Lifestyle Plan

4.2 Integrating hygienic habits into daily routines.

4.3 Setting goals for maintaining cleanliness, health, and fitness.

4.4 Reflecting on personal growth and adherence to healthy practices.

Suggested reading Specific to the Module

4.1 Emmons, R. A. (1991). Personal strivings, daily life events, and psychological and physical well-being. *Journal of Personality*, 59(3), 453-472.

4.2 Green, L. W., & Kreuter, M. W. (2005). *Health Program Planning: An Educational and Ecological Approach*. McGraw-Hill Education

Module 5: Teacher Specific Module

Hours of transaction: 05

Practical work, project and assessment based on the prior learning and modules to be suggested and guided by the respective teacher

Core Compulsory reading

1. Miller, E. D. (2021). *Living in Balance: A Holistic Approach to Health and Well-being*. McGraw-Hill Education.
2. Johnson, M. W. (2019). *The Balanced Life: A Comprehensive Guide to Wellness and Health*. Publisher.
3. Roberts, P. H. (2020). *Clean and Fit: The Role of Hygiene in Maintaining Health and Fitness*. Health Press.
4. Green, L. W., & Kreuter, M. W. (2005). *Health Program Planning: An Educational and Ecological Approach*. McGraw-Hill Education

Core suggested readings

- Saper, C. B., Fuller, P. M., & Pedersen, N. P. (2020). *Sleep: A Very Short Introduction*. Oxford University Press.
- Davis, K. P. (2019). Sleep Hygiene: A Comprehensive Approach to Better Sleep and Health. *Journal of Sleep Research*, 28(2), 120-135.
- Wilson, A. C. (2022). Unwinding the Mind: Strategies for Relaxation and Stress Reduction Before Bedtime. *Sleep and Health*, 8(4), 210-225
- Garcia, L. S. (2017). Hygiene Matters: The Link Between Cleanliness and Overall Health. *Journal of Health and Fitness*, 25(3), 45-58.

TEACHING LEARNING STRATEGIES

- The class will be taught by using lectures and demonstrations, seminars, classroom

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discussions, videos, charts, and presentation methods.

MODE OF TRANSACTION

- Lecture//Laboratory Work/ Field Work/ Outreach Activities/ Project Work/ Vocational Training/Viva/ Seminars/ Term Papers/Assignments/ Presentations/ Self-Study etc.

ASSESSMENT RUBRICS

Evaluation Type		Marks
End Semester Evaluation		50
Continuous Evaluation		50
a)	Test Paper- 1 (Written/Oral)	10
b)	Test Paper-2 (Written/Oral)	10
c)	Assignment Seminar Record Viva-Voce Any other relevant mode of evaluation	(Any three- each for 10 marks) 10 X 3 = 30 Marks
Total		100

VALUE ADDED COURSE

KU6VACPES106: HUMAN BODY MECHANICS AND ERGONOMICS

Semester	Course Type	Course Level	Course Code	Credits	Total Hours
6	VAC	100	KU6VACPES106	3	45

Learning Approach (Hours/ Week)			Marks Distribution			Duration of ESE (Hours)
Lecture	Practical/ Internship	Tutorial	CE	ESE	Total	
45	0	0	50	50	100	1 hr. 30 minutes

Lecture/Tutorials, P=Practical, CE =Continuous Evaluation, ESE = End Semester Evaluation

Course Description

The course introduces the students to ergonomics and body mechanics; specifically related to work place and environmental hazards. It also provides knowledge and awareness on prevention and management strategies of musculoskeletal disorders related to the same.

Course Outcomes:

After completing this course, the students will be able to

CO No.	Expected Outcome	Learning Domains
CO1	Understand the concept of human body mechanism and ergonomic practises.	U, A
CO2	Realise the importance of ergonomic corrections.	U, R
CO3	Understand health risks factors associated with poor postural habits.	R, A,
CO4	Orienting students to lead good ergonomic practises.	R, A, C

Mapping of Course Outcomes to PSOs

	PSO1	PSO2	PSO3	PSO4	PSO5	PO6	PSO7
CO1	√	√	√				
CO2		√	√	√			
CO3		√	√	√			
CO4		√		√	√	√	√

COURSE CONTENTS:

Module 1: Systems of the Human Body

Hours of transaction: 8

- Introduction to human body and body mechanics
- Skeletal system- structure, function and applied concepts of skeletal system
- Muscular system- structure, function and applied concepts of muscular system
- Posture-Types, development and postural deformities

Module 2: Ergonomics

Hours of transaction: 8

- History of ergonomics
- Workplace evaluation
- Computer ergonomics for students
- Computer vision syndrome and management

Unit III: Environmental Ergonomics and Risk Assessment

Hours of transaction: 12

- Introduction to environmental hazards
- Human exposure to vibration, thermal stress and noise- introduction, effects and management
- Assessing the risk of upper limb disorders- introduction, upper limb disorders and RULA
- Rapid entire body assessment(REBA)

Unit IV: Musculoskeletal Disorders

Hours of transaction: 12

- Introduction to musculoskeletal disorders
- Risk assessment
- Prevention strategies
- Management

Module 5 : Teacher Specific Module

Hours of transaction: 5

Practical work, project and assessment based on the prior learning and modules to be suggested and guided by the respective teacher

REFERENCES:

1. Glenda . L., Key . (1995). *Industrial therapy*. Mosby publishers.
2. David C. Alexander. (2020). *Applied ergonomics*. Taylor and Francis group publishers.
3. Aydin Tozeren . (2000). *Human body dynamics*. Springer publishers.
4. Waldemer Karwowski. (1999). *International encyclopedia of ergonomics and human factors*. Taylor and Francis Publishers.

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ASSESSMENT RUBRICS

Evaluation Type		Marks
End Semester Evaluation		50
Continuous Evaluation		50
a)	Test Paper- 1 (Written/Oral)	10
b)	Test Paper-2 (Written/Oral)	10
c)	Assignment Seminar Record Viva-Voce Any other relevant mode of evaluation	(Any three-each for 10 marks) 10 X 3 = 30 Marks
Total		100