FACULTY OF SPORTS MEDICINE & PHYSIOTHERAPY

SYLLABUS

FOR

POST GRADUATE DIPLOMA IN EXERCISE PHYSIOLOGY
(Semester: I – II)

Session: 2019-20

Note: (i) Copy rights are reserved. Nobody is allowed to print it in any form. Defaulters will be prosecuted.

(ii) Subject to change in the syllabi at any time. Please visit the University website time to time.

GURU NANAK DEV UNIVERSITY
AMRITSAR
### Semester-I

<table>
<thead>
<tr>
<th>Course No.</th>
<th>C/E/I</th>
<th>Course Title</th>
<th>L</th>
<th>T</th>
<th>P</th>
<th>Total Credits</th>
<th>Marks (Mid Semester + Major Exam)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td><strong>Core Courses</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EPL101</td>
<td>C</td>
<td>Fundamentals of Anatomy, Physiology and Psychology of Exercise Physiology</td>
<td>4</td>
<td>0</td>
<td>6</td>
<td>7</td>
<td>20+80:100</td>
</tr>
<tr>
<td>EPL102</td>
<td>C</td>
<td>Biomechanics and Exercise Science</td>
<td>4</td>
<td>0</td>
<td>0</td>
<td>4</td>
<td>20+80:100</td>
</tr>
<tr>
<td>EPL103</td>
<td>C</td>
<td>Exercise Testing &amp; Prescription</td>
<td>4</td>
<td>0</td>
<td>0</td>
<td>4</td>
<td>20+80:100</td>
</tr>
<tr>
<td>EPL104</td>
<td>C</td>
<td>Common Sports Injuries and Investigation</td>
<td>4</td>
<td>0</td>
<td>0</td>
<td>4</td>
<td>20+80:100</td>
</tr>
<tr>
<td>EPE112</td>
<td>C</td>
<td>Exercise Training</td>
<td>0</td>
<td>0</td>
<td>8</td>
<td>8</td>
<td>* C.F.</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td>16</td>
<td>0</td>
<td>14</td>
<td>27</td>
<td></td>
</tr>
</tbody>
</table>

* C.F. (carried forward to 2nd semester)

### Semester-II

<table>
<thead>
<tr>
<th>Course No.</th>
<th>C/E/I</th>
<th>Course Title</th>
<th>L</th>
<th>T</th>
<th>P</th>
<th>Total Credits</th>
<th>Marks (Mid Semester + Major Exam)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td><strong>Core Courses</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EPL151</td>
<td>C</td>
<td>Neuromotor behaviour and team sports evaluation</td>
<td>4</td>
<td>0</td>
<td>6</td>
<td>7</td>
<td>20+80:100</td>
</tr>
<tr>
<td>EPL152</td>
<td>C</td>
<td>Basic Nutrition</td>
<td>4</td>
<td>0</td>
<td>0</td>
<td>4</td>
<td>20+80:100</td>
</tr>
<tr>
<td>EPL153</td>
<td>C</td>
<td>Quantitative Research Methods</td>
<td>4</td>
<td>0</td>
<td>0</td>
<td>4</td>
<td>20+80:100</td>
</tr>
<tr>
<td>EPE162</td>
<td>C</td>
<td>Exercise Training – II</td>
<td>0</td>
<td>0</td>
<td>8</td>
<td>8</td>
<td>*300</td>
</tr>
<tr>
<td><strong>Elective Course (3 Credits)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E</td>
<td>E</td>
<td>Elective Course</td>
<td>3</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td>20+80:100</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td>15</td>
<td>0</td>
<td>14</td>
<td>26</td>
<td></td>
</tr>
</tbody>
</table>

*Total marks from I to II semesters

*List of Elective Courses:*
  1. Evidence Based Practice in Allied Health Sciences - SPL690
  2. Women Health and Exercise - SPL691
Post Graduate Diploma in (Exercise Physiology)  
(Under Credit Based Continuous Evaluation Grading System)

A. Theory (Examination)  
Instructions to Paper Setters:  
The paper setters should set 8 questions (of equal marks), two in each of the four sections (Unit I to IV, corresponding to the distribution in the syllabi). Further, the paper setters shall be instructed to make sub-sections (not exceeding 4) of the questions and allocate appropriate marks to each section. The candidates shall be asked to attempt five questions by selecting one question from each section and the fifth question may be attempted from any section.  
* 1 hr of theory and dissertation is counted as 1 credit. 2 hr of practical /clinical training is counted as 1 credit.

B. Practical Examination  
Practical examination of Basis of Exercise Physiology (includes EPL101, EPL151) will be conducted once at the end of 2nd semester which includes assessment of skill of practical performance (according to detailed syllabus), its report generation and submitting practical file, viva-voce etc.  
Practical examination of Exercise Training (includes EPE112 and EPE162) will be conducted once at the end of 2nd semester which includes patient evaluation and management, viva-voce etc.  

Practical Attachments:  
To enable the students to acquire practicing in hands on skills, maximum emphasis will be laid on regular practical classes, demonstration and clinical practice. The students will undergo Clinical / Field training in GNDU Campus / Sports Authority of India (Various Centres), National Institutes of Physiotherapy, Government Medical College Amritsar, other sporting centres and to the coverage of various tournaments as and when required and decided by BOC. The students will attend on field training which consists of early morning hours and evening late hours inclusive of weekends.  
* The credits earned by a candidate in practical and dissertation during different semesters will be evaluated at the end of the 2nd semester and the grade will be determined accordingly.  
* A candidate shall be required to maintain minimum of 4 SGPA at the end of each semester. A student getting ‘F’ grade in any course in this discipline will be treated as having failed in that course and shall have to repeat the core/elective courses/or repeat/opt. another course in lieu of interdisciplinary/outside department course with approval of Board of Control, and will have to obtain at least ‘P’ grade in that course within specified period as per the prevailing rules. The weights of ‘F’ Grade will not be counted in SGPA or CGPA (according to syndicate proceeding, dated: 24.5.2010, para no. 34).

Interdisciplinary/Optional Course: to be offered from outside the department.
Post Graduate Diploma in (Exercise Physiology) (Semester-I)
(Under Credit Based Continuous Evaluation Grading System)

**EPL101: FUNDAMENTALS OF ANATOMY, PHYSIOLOGY AND PSYCHOLOGY OF EXERCISE PHYSIOLOGY**

<table>
<thead>
<tr>
<th>L</th>
<th>T</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>0</td>
<td>6</td>
</tr>
</tbody>
</table>

Max Marks: 100
Mid Term: 20
Major Exam: 80

Mid Semester Examination: 20% weightage
End Semester Examination: 80% weightage

**Instructions for the Paper Setters:**
Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION A**
Basic Fundamentals of Anatomy, Physiology and Psychological aspect of exercise
- Anatomy and physiology of muscle, innervations, function and biochemistry.
- Role of calcium, vitamin D, protein and hormonal control of muscle.
- Types of exercise (aerobic/anaerobic) and types of exercise programmes/individualising exercise.
- Training regimes – endurance, power, HIT, improving performance.
- Psychology of exercise. How to motivate the patient to exercise.
- How to motivate the athlete.

**SECTION B**
Fundamentals of Energy:
- Energy Transfer: Potential and kinetic energy, inter conversion of energy, Biological work in humans, factors effecting bioenergetics.
- ATP energy currency
- Phosphocreatinine: energy reservoir
- Intramuscular high energy phosphate
- Cellular oxidation and electron transport chain
SECTION C
Skeletal & Neuromuscular and Endocrine System:
- Skeletal muscle structure and contractile properties
- Types of skeletal muscle and how they are important in various sports activities Architectural properties
- Neurons, motor unit recruitment and integrative control of movements Neurological Control of Movement
- Neuromuscular Adaptations to Resistance Training
- Size principle of motor unit recruitment Contractile properties
- Types of contractions experimental models of muscle contraction Length-tension relationship
- Force-velocity relationship
- Training for muscle strength, endurance, and power
- Principles of skeletal muscle adaptations, endurance conditioning
- Central and neuromuscular fatigue
- Ergogenic aids that enhance muscle size and function
- Muscle glycogen; super-compensation during / before athletic competition.

SECTION D
Applied Exercise Physiology:
- Human energy metabolism during exercise
- Training for aerobic and anaerobic power
- Exercising during pregnancy
- Muscular strength, Strength and Resistance training
- Structural and functional adaptations to resistance training
- Body composition and physical performance
- Measurements of heart rate at rest and different exercising conditions
- Classification of workload & continuous recording of heart rate using heart rate monitor, Determination of maximal heart rate, cardiac cost & cardiac efficiency-step test, cycle ergometer & treadmill
- Measurement of body temperature, (oral, axial, skin) at rest and different working condition
- Recording and interpretation of ECG & EMG at rest and working condition; effects of posture on ECG
- Determination of pulmonary ventilation; Static and dynamic lung function tests
- Exercise performance and Environmental Stress Exercising at Medium And High Altitude, Thermal stress (thermoregulation) during exercise
Post Graduate Diploma in (Exercise Physiology) (Semester-I)
(Under Credit Based Continuous Evaluation Grading System)

Practicals:
- To measure the normal Blood Pressure and its postural effect and exercise effect
- To determine the pulse rate on human body and autonomic system of normal healthy adults
- To evaluate the cardiac efficiency test on sports person/ normal healthy adults
- Demonstration of different VO_2 (oxygen consumption) protocols on different platform
- Demonstration of ECG and its interpretation

REFERENCES:
Textbooks

Peer-reviewed journals
Strength and Conditioning Journal
Journal of Strength and Conditioning Research
Medicine and Science in Sports and Exercise
American Journal of Physiology

Online resources
www.acsm.org/
www.nsca-lift.org/
www.the-aps.org/
www.faseb.org
Post Graduate Diploma in (Exercise Physiology) (Semester-I)  
(Under Credit Based Continuous Evaluation Grading System)  

EPL102: BIOMECHANICS & EXERCISE SCIENCE  

<table>
<thead>
<tr>
<th>L</th>
<th>T</th>
<th>P</th>
<th>Max Marks: 100</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>0</td>
<td>0</td>
<td>Mid Term: 20</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Major Exam: 80</td>
</tr>
</tbody>
</table>

Mid Semester Examination: 20% weightage  
End Semester Examination: 80% weightage  

Instructions for the Paper Setters:  
Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.  

SECTION A  
Introduction to Basic of Biomechanics  
- Definition, aims, objectives and role of Biomechanics in sports physiotherapy.  
- Review of fundamental concepts (applied aspect), Centre of gravity, Line of gravity, Planes, Lever system in Body, Fundamental starting positions.  
- Review of linear and angular kinematics  

SECTION B  
Mechanics of Musculoskeletal System  
- Tissue loads, response of tissues to forces- Stress, Strain, Stiffness and mechanical strength, visco elasticity  
- Physical Properties of bone, cartilage, tendon and ligaments, functional adaptation under pathological conditions.  
- Impaired neuromuscular control, muscular force regulation in Frame work and joints of the body: Influence of trauma and classification of the muscles, Relation of structure, functions, role of muscles, types of Muscle, contractions (Static, Concentric and Eccentric), Two joint Muscles, Angle of pull, Role of Gravity affecting muscular action.  

SECTION C  
I. Introduction  
- Nature and importance of Biomechanics in Physiotherapy  
- Principle of Biomechanics  

II. Movement Analysis  
- Biomechanics of shoulder and shoulder complex, elbow complex, wrist and hand complex  
- Biomechanics of pelvic, hip, knee, ankle & foot complex  
- Biomechanics of spine
Post Graduate Diploma in (Exercise Physiology) (Semester-I)
(Under Credit Based Continuous Evaluation Grading System)

SECTION D

Movement Analysis
   a) Neuro biomechanics
   b) Posture and Gait analysis
   c) Biomechanical Analysis & Techniques – Force platforms

References:
1. Brunstrom – Clinical Kinesiology, F.A. Davis.
EPL103: EXERCISE TESTING & PRESCRIPTION

Max Marks: 100
Mid Term: 20
Major Exam: 80

Mid Semester Examination: 20% weightage
End Semester Examination: 80% weightage

Instructions for the Paper Setters:
Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

SECTION A
- Concepts of skill-related fitness and factors affecting sports performance.
- Athletic needs analysis and prehabilitation.
- Functional movement screening and corrective exercise.
- Exercise and fitness assessments for athletes.

SECTION B
- Training techniques for developing speed and agility.
- Training techniques for developing aerobic capacity and endurance.
- Training techniques for developing hypertrophy, strength and power.
- Training techniques for developing balance, stability and neuromuscular control.

SECTION C
- Periodisation strategies.
- Training program implementation and yearly planning.
- Monitoring athletes and training loads.

SECTION D
- Recovery strategies.
- Designing sport-specific exercise prescriptions for individuals and teams.
- Rehabilitation and return from injury.
- Program evaluation.

References:
Post Graduated Diploma in (Exercise Physiology) (Semester-I)  
(Under Credit Based Continuous Evaluation Grading System)

**EPL104: COMMON SPORTS INJURIES AND INVESTIGATION**

<table>
<thead>
<tr>
<th>L</th>
<th>T</th>
<th>P</th>
<th>Max Marks: 100</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>0</td>
<td>0</td>
<td>Mid Term: 20</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Major Exam: 80</td>
</tr>
</tbody>
</table>

Mid Semester Examination: 20% weightage  
End Semester Examination: 80% weightage

**Instructions for the Paper Setters:**  
Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION A**  
- Common injuries sustained whilst undertaking exercise/sport relating to musculoskeletal injuries (Muscular injury, common bone injury, neurological injury, lacerations, tendon and joint injuries).

**SECTION B**  
- Common and uncomplicated injury of the entire body: head, neck, lumbar spine, cardiovascular, upper and lower limb.

**SECTION C**  
- Injury associated with prescribed exercise programmes.  
- Avoidance of injury and evidence based devices to reduce or eliminate injury.

**SECTION D**  
- Accurate diagnosis of injury through appropriate history and examination.

**References:**  
Post Graduate Diploma in (Exercise Physiology) (Semester-II)
(Under Credit Based Continuous Evaluation Grading System)

EPL151: NEUROMOTOR BEHAVIOUR AND TEAM SPORTS EVALUATION

L T P Max Marks: 100
4 0 6 Mid Term: 20

Mid Semester Examination: 20% weightage
End Semester Examination: 80% weightage

Instructions for the Paper Setters:
Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

SECTION A
- Classification of motor skills;
- Motor abilities and individual differences;
- Neuromotor basis of motor control;
- Sensory contributions to motor control;
- Theories of motor control;
- Characteristics of functional skills

SECTION B
- Spinal cord organisation, central pattern generators and reflex arcs;
- Somatosensation, ascending sensory pathways and sensory-perception;
- Decision making, movement planning, organisation, execution and descending motor pathways;
- Neurophysiological aspects of sensorimotor learning and memory;
- Vestibular function; Eye movement;
- Postural control, locomotion and reaching/grasping;
- Sensorimotor changes with ageing, injury, exercise and reduced use

SECTION C
- Educational strategies employed in the management of acute and chronic injury.
- Role of the multidisciplinary team in the management of the injured patient.

SECTION D
- Multidisciplinary approaches to encouraging exercise across the population.
- The evolving role of the sports physician, nurse, physiotherapist and biomechanist in sports and exercise medicine.

References
Textbooks
Post Graduate Diploma in (Exercise Physiology) (Semester-II)  
(Under Credit Based Continuous Evaluation Grading System)

**EPL152: BASIC NUTRITION**

<table>
<thead>
<tr>
<th>L</th>
<th>T</th>
<th>P</th>
<th>Max Marks: 100</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>0</td>
<td>0</td>
<td>Mid Term: 20</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Major Exam: 80</td>
</tr>
</tbody>
</table>

Mid Semester Examination: 20% weightage  
End Semester Examination: 80% weightage

**Instructions for the Paper Setters:**  
Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION A**

**Nutrition Basics**

1. What Nourishes You?  
   The Basis of a Healthy Diet  
   The food pyramid  
   Energy density of macronutrients and alcohol  
2. Human Digestion and Absorption  
   Metabolism of the energy-yielding nutrients  
   Bioenergetics: fuels for exercise and their pathways  
   Anaerobic metabolism  
   ATP-CP, Myokinase, fast glycolysis, lactic acid production  
   Fate of lactic acid  
   Aerobic metabolism  
   Transition into the mitochondria, Kreb’s cycle, ETC  
   Macronutrients: when are they used for fuel for exercise?  
   Carbohydrates Lipids Proteins  
   Alcohol metabolism

**SECTION B**

1. The Vitamins  
   The Fat-Soluble Vitamins The Water-Soluble Vitamins Major Minerals Trace Minerals  
2. The importance of water  
   How water is involved in metabolism The importance of hydration  
   The athlete and proper hydration Hydration guidelines
Post Graduate Diploma in (Exercise Physiology) (Semester-II)  
(Under Credit Based Continuous Evaluation Grading System)

SECTION C

Energy Production and Energy Balance
1. Units of energy  
   Measurement of energy expenditure by direct and indirect calorimetry Basal metabolic rate, respiratory quotient, specific dynamic action Factors effecting BMR  
   Prerequisites of measuring BMR and RMR  
   Specific dynamic action of food  
   Regulation of energy balance
2. Anaerobic energy systems Aerobic energy pathways  
   Energy Balance and Weight Control Concerns of obesity epidemic Causes

SECTION D

Nutrition for Sports and Fitness
1. Special considerations for competitive athletes  
   Special needs for vegetarian athletes Energy needs of the athlete Pre-competition meals During competition, post-competition and recovery guidelines for electrolyte replacements
3. Nutritional disorders: Anorexia Nervosa Bulimia Nervosa Binge-Eating Disorder Other Conditions Metabolic Syndrome, Female Athlete Triad. The ethics of weight control in some sports

References

Textbooks

Peer-reviewed journals

*The Journal of Nutrition*  
*The American Journal of Clinical Nutrition*  
*European Journal of Clinical Nutrition*  
*British Journal of Nutrition*
Post Graduate Diploma in (Exercise Physiology) (Semester-II)
(Under Credit Based Continuous Evaluation Grading System)

**EPL153: QUANTITATIVE RESEARCH METHODS**

<table>
<thead>
<tr>
<th>L</th>
<th>T</th>
<th>P</th>
<th>Max Marks: 100</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>0</td>
<td>0</td>
<td>Mid term: 20</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Major Exam: 80</td>
</tr>
</tbody>
</table>

Mid Semester Examination: 20% weightage
End Semester Examination: 80% weightage

Instructions for the Paper Setters:
Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION A**

1. **Basic concepts**-Importance of research in clinical practice, Problem identification, Ethical issues in research, Literature review, meta-analysis
2. **Types of Research**-Qualitative & Quantitative, Descriptive & Experimental, Longitudinal & Cross-sectional, Survey Research.
3. **Sample Designs**-Types of sampling, Reliability, Validity, Variables, sample size.

**SECTION B**

1. **Processing and analysis of data**-Central tendency, Dispersion, Correlation, regression analysis, multiple correlation and regression.
2. **Sampling and testing of hypothesis**-Concept of probability, Standard deviation, confidence intervals, null and alternate hypothesis, level of significance, correlation coefficients, ANOVA, Tukey's HSD.
3. **Non parametric tests**-Fisher Irwin test, Mc Nemar test, Wilcoxon Mali test, Mann Whitney test, Kruskal Walis test, Spearman's rank correlation.

**SECTION C**

2. **Presenting Research**-Strategies of paper writing, Design of paper writing, Tactics of paper writing, Reasons for rejection, Where to publish, Poster presentation (Poster space, Standard format), Plagiarism.
3. **Oral Presentations at Conferences/Seminars**-Preparing presentation, Duration of presentation, What to present
SECTION D

Educational Methodology-Principles and methods of teaching with respect to physiotherapy students and client: Strategies and planning of teaching, curriculum development, formation of course objective, time management, role of Audio – visual aids, method of knowledge dissemination.

Practicals:
The student will be required to review the literature thoroughly and prepare a research proposal for dissertation in consultation with his/her supervisor by the end of the semester.

References:
5. Hicks: Research for Physiotherapists, Churchill Livingstone
Post Graduate Diploma in (Exercise Physiology) (Semester-II)
(Under Credit Based Continuous Evaluation Grading System)

SPL690: EVIDENCE BASED PRACTICE IN ALLIED HEALTH SCIENCES (ELECTIVE)

<table>
<thead>
<tr>
<th>L</th>
<th>T</th>
<th>P</th>
<th>Max Marks: 100</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>0</td>
<td>0</td>
<td>Mid Term: 20</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Major Exam: 80</td>
</tr>
</tbody>
</table>

Mid Semester Examination: 20% weightage
End Semester Examination: 80% weightage

Instructions for the Paper Setters:
Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

SECTION A
1. Introduction to evidence-based complementary medicine
2. Evidence-based health care
3. Evidence-based practices
4. Evidence-based decision making and management

SECTION B
Types of evidence
a. Definition of evidence
b. Forms of evidence
c. Randomized controlled trials

SECTION C
a. Case-control studies
b. Cohort studies

SECTION D
1. Applying the evidence
   a. Pathways, guidelines and protocols
   b. Future directions for clinical effectiveness
2. Evaluation of effectiveness and efficiency of the process
Post Graduate Diploma in (Exercise Physiology) (Semester-II)
(Under Credit Based Continuous Evaluation Grading System)

References:

1. Martin Dawes, Philip Davies, and Alistair Gray, Evidence-Based Practice: A Primer for Health Care Professionals. Elsevier Publication.
Post Graduate Diploma in (Exercise Physiology) (Semester-II)  
(Under Credit Based Continuous Evaluation Grading System)

**SPL691: WOMEN HEALTH AND EXERCISE (ELECTIVE)**

<table>
<thead>
<tr>
<th>L</th>
<th>T</th>
<th>P</th>
<th>Max Marks: 100</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>0</td>
<td>0</td>
<td>Mid Term: 20</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Major Exam: 80</td>
</tr>
</tbody>
</table>

Mid Semester Examination: 20% weightage  
End Semester Examination: 80% weightage

**Instructions for the Paper Setters:**
Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

**SECTION A**
1. Gender difference in muscle morphology  
2. Diagnosis and Treatment of Urinary Incontinence and Prolapse  
3. Anemia

**SECTION B**
1. Hypertension in Women  
2. Bone health: assessment and treatment of osteopenia and osteoporosis  
3. Evaluation and Treatment of Common Musculoskeletal Complaints

**SECTION C**
1. Exercise for the childbearing year  
2. Exercise for adolescence  
3. Perimenopausal and post menopausal

**SECTION D**
1. Exercise in Athletic Women  
2. Medical Problems in Sports Women
Post Graduate Diploma in (Exercise Physiology) (Semester-II)
(Under Credit Based Continuous Evaluation Grading System)

References: