Licentiate Diploma

ANATOMY AND PHYSIOLOGY OF A CLASSICAL DANCER
Module

Cecchetti Ballet Australia ^{Inc}.
A Member of Cecchetti International – Classical Ballet

MODULE DETAILS

MODULE NAME   Anatomy and Physiology of a Classical Dancer

MODULE PURPOSE   In this module, participants develop an understanding of the connection between human body structure, nutrition and safe dance practice.

Participants will:
- consolidate principles of posture and alignment to a level demanded in classical ballet
- develop an understanding of human anatomy and anatomical structures
- apply knowledge of basic anatomy with particular reference to classical ballet
- commence the study of nutrition specific to a dancer's needs
- make connections between anatomical and nutritional principles to classical ballet technique, performance and injury prevention
- develop a basic understanding of the elements of injury prevention for dancers

Content studied by the participants should include:
- information about anatomy and nutrition in relation to safe dance practice
- alignment principles
- connective tissues of the body
- skeleton and joint structure
- muscular system (including development, growth and repair)
- nervous system
- systems of the body with particular reference to the cardiorespiratory system
- relationship between anatomical structures and dance alignment, technique and performance
- nutritional needs of the dancer
- injury prevention

PRE-REQUISITES   Candidates must have successfully completed the anatomy assessment paper required to achieve the Associate Diploma. This paper has a safe dance focus.

CO-REQUISITES   N/A

SUMMARY OF LEARNING OUTCOMES

1. Formulate/Demonstrate knowledge of the principles of posture and alignment as demanded by classical ballet technique and performance.
2. Specify a knowledge of connective tissue elements and their functions as they relate to the dancer.
3. Formulate knowledge of the structure and function of the principle bones of the human skeleton.
4. Combine a knowledge of the different types of joints of the human body and their function in dance.
5. Analyse the major muscle groups as utilised by the dancer and describe their basic structure and function in dance alignment and technique.

6. Apply knowledge of the basic function of the nervous system in relation to movement, posture and dance technique.
7. Combine the basic principles of nutrition with the requirements of a dancer specific to the demands of dance training, performance and injury prevention.
8. Summarise the function of the body's systems with a particular understanding of the cardiorespiratory system as it relates to classical ballet.
9. Demonstrate a knowledge of the basic elements of injury prevention for dancers

Learning Outcome 1   Demonstrate knowledge of the principles of posture and alignment as demanded by classical ballet technique and performance.

Assessment Criteria   1.1   Analyse the principles of good ***posture*** with particular reference to classical ballet
                                       1.2   Discuss the principles of good posture and alignment in relation to the following:
- Plié
- Demipointe/pointe
- Arabesque
- Turnout
- Jumps (petit and grand allegro)
- Lifts

Learning Outcome 2   Specify a knowledge of connective tissue elements and their functions as they relate to the dancer

Assessment Criteria   2.1   Analyse the structure and function of the major connective tissues of the human body including: fascia (deep and superficial), joint capsules, ligament and tendons.
                                       2.2   Analyse the structure and function of the myofascial slings of the human body as they relate to classical ballet alignment and technique. Including a basic understanding of the following:
- Posterior oblique sling
- Anterior oblique sling
- Lateral sling

Learning Outcome 3   Formulate knowledge of the structure and function of the principle bones of the human skeleton

Assessment Criteria   3.1   Specify the structure and function of the human skeleton with particular reference to the principles of dance alignment and technique
                                       3.2   Analyse the principle bones of the human skeleton
                                       3.3   Identify the principle superficial bony landmarks on the human body.

Learning Outcome 4   Combine a knowledge of the different types of joints of the human body and their function in dance

Assessment Criteria   4.1   Specify and describe the structure of the three ***major types of joints*** in the human body.

<table>
<tr><td></td><td>4.2</td><td>Discuss the major joints of the human body and describe the function and stabilising factors of each, with particular reference to dance movement (e.g. plié, hip rotation), and any limitations to movement or control at each joint. Include an understanding of the structure of the following joints:</td></tr>
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4.2 Discuss the major joints of the human body and describe the function and stabilising factors of each, with particular reference to dance movement (e.g. plié, hip rotation), and any limitations to movement or control at each joint. Include an understanding of the structure of the following joints:

- Hip
- Knee
- Ankle (including the inferior tibiofibular joint)
- Foot (including subtalar joint, midfoot, 1st metatarsaophalangeal joint, 1st interphalangeal joints)
- Shoulder
- Elbow
- Wrist
- Spine (including lumbar intervertebral facet joint, lumbar intervertebral disc, costovertebral joint)

Learning Outcome 5

Analyse the major muscle groups as utilised by the dancer and describe their basic structure and function in dance alignment and technique.

Assessment Criteria

5.1 Specify and briefly describe the three *types of muscle* found in the human body.

5.2 Analyse the structure and function of skeletal muscle.

5.3 Identify the major muscle groups of the human body and describe their attachments and actions with particular reference to classical ballet technique (e.g. plié, relevé, turnout).

5.4 Identify the surface anatomy of the superficial musculature

Learning Outcome 6

Apply knowledge of the basic function of the nervous system in relation to movement, posture and dance technique.

Assessment Criteria

6.1 Discuss in general terms, the *structure of nervous system* in the human body

6.2 Analyse the principles of neuromuscular coordination with particular reference to posture and alignment, balance and coordination in skill acquisition, injury prevention and injury rehabilitation.

6.3 Discuss the principles of sensory awareness, somatics, imagery and mental rehearsal as they relate to dance alignment, technique and performance.

Learning Outcome 7

Combine the basic principles of nutrition with the requirements of a dancer specific to the demands of dance training, performance and injury prevention.

Assessment Criteria

7.1 Discuss the major food groups and examples of the various types of food in each group.

7.2 Analyse the importance of maintaining an adequate level of hydration when exercising

7.3 Analyse the nutritional elements that need to be addressed by a dancer with a vegetarian or vegan diet.

7.4 Specify the effects of good and bad nutritional habits on a dancer's well-being.

7.5 Specify appropriate pre-class and pre-performance dietary requirements

7.6 Analyse the value of food in relation to body repair

7.7 Discuss appropriate dietary requirements that allow recovery from class work, rehearsals and performances

Learning Outcome 8	Summarise the function of the body's systems with a particular understanding of the cardiorespiratory system as it relates to classical ballet.
Assessment Criteria	8.1 Identify and give a brief description of the various ***systems of the body***
	8.2 Analyse the structure and function of the cardiovascular and respiratory systems with particular reference to dance training, rehearsal and performance.
Learning Outcome 9	Demonstrate a knowledge of the basic elements of ***injury prevention*** for dancers
Assessment Criteria	9.1 Identify and give a brief description of the methods that can be utilised to encourage injury prevention in dance

REQUIRED KNOWLEDGE

This provides a summary of the essential knowledge and level required for this module.

- Application of knowledge of technique and anatomy to the classical dancer.

- Ability to assess all situations with relation to safety and prevention of injury

- Application of knowledge of technique and anatomy as it relates to posture and "ideal alignment", and how the dancer works to achieve this.

- Application of knowledge of how the dancer's body functions to perform plié, a tendu, rise to demipointe, turnout, arabesque and jumps (petit and grand allegro) in a classical ballet class,

- Application of knowledge of how the dancer's body functions to perform a lift in a classical ballet class.

- Literacy skills sufficient to undertake the written examinations.

- Research skills and the ability to acquire technical terminology.

RANGE STATEMENT

The Range Statement relates to the module as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording in the Assessment Criteria is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.

Posture
- Alignment
- Stance
- Correction of individual anomalies
- Terms of position (e.g. anterior, posterior, etc)
- Directions of movement (e.g. flexion, extension, abduction, etc)

Body structure
- Skeleton
- Joints
- Muscles

- Connective tissue

Major types of joints
- Synovial joints
- Fibrous joints
- Cartilaginous and fibrocartilaginous joints

Types of Muscle
- Skeletal muscle
- Smooth muscle
- Cardiac muscle

Structure of nervous system
- Peripheral nervous system
- Central nervous system
- Autonomic system
- Motor nerve
- Sensory nerve

Principles of neuromuscular co-ordination
- Control of alignment
- Sensory receptors
- Proprioceptors (position sense)
- Visual receptors
- Vestibular receptors (balance, equilibrium)
- Neural reflexes (including stretch reflex)
- Stretch reflex (myotatic reflex)
- Inverse myotatic reflex
- Reciprocal innervation (as utilised in PNF techniques)
- Co-activation/co-contraction

Principles of somatics and imagery
- Somatics
- Sensory awareness
- Imagery
- Mental practice and mental rehearsal

Nutrition
- Energy demands of classical dance
- Food groups
- Water and hydration
- Body repair

Systems of the body
- Integumentary system
- Skeletal system
- Muscular system
- Nervous system
- Endocrine system
- Cardiovascular system
- Lymphatic system
- Respiratory system
- Digestive system
- Urinary system
- Reproductive system

Injury prevention
- Understand individual biomechanical/physiological variations
- Alignment
- Technique
- Warm up
- Appropriate conditioning (e.g. flexibility, strength, cardiovascular fitness, etc)
- Recovery
- Environment

- Recognise fatigue
- Correct rehabilitation of injuries

EVIDENCE GUIDE

The evidence guide provides advice on assessment and must be read in conjunction with the Assessment Criteria, Required Skills and Knowledge, the Range Statement and the Assessment section in Section B of the accreditation submission.

Overview of Assessment	• Assessment will take the form of 8 short answer questions & 2 detailed answer questions, and the preparation of a 1500-2000 word essay. The initial 10 questions form Parts A and B and will be assessed by a single Assessor. The essay, which forms Part C, will be assessed by dual Assessors.
Critical aspects for assessment and evidence required to demonstrate achievement of the learning outcomes in this module	• The ability to demonstrate an understanding of the anatomy and biomechanics of good dance posture, alignment and technique, a knowledge of the stresses and strains on the human body with classical ballet training and an understanding of the elements of injury prevention when performing/instructing the art of classical ballet
Context of and specific resources for assessment	**OH&S requirements** The principles of OH&S must be incorporated wherever relevant to work practice. The following must be available • Sprung floor, preferably timber. If surface is slippery tarket or equivalent should be laid. • Appropriately secured barre • Climate control • Encourage hydration throughout class as necessary • Awareness of basic first aid and appropriate first aid kit • Work within the boundaries of student's physical/ medical conditions **Specialised facilities and equipment** • Mirrored walls (optional) • Sprung floor, preferably timber. If surface is slippery tarket or equivalent should be laid. • Appropriately secured barre • Climate control • Piano or music stereo system • Toilets and dressing room area • Rosin (where necessary) • First aid kit **Compulsory Textbooks:** • Haas, JG. (2017) Dance Anatomy. Second Edition. Human Kinetics. Champaign, Illinois. • Wilmerding, MV, Krasnow, DH. (2017) Dancer Wellness. Human Kinetics. Champaign, Illinois. **Other Recommended Textbooks:** • Clippinger, K. (2016) Dance Anatomy and Kinesiology. Second Edition. Human Kinetics. Champaign, Illinois. • Howse, J and McCormack, M. (2009) Anatomy, Dance Technique and Injury Prevention. Fourth Edition. Metheun Drama. London. • Mastin, Z. (2010) Nutrition for the Dancer. Dance Books. Hampshire, UK.

Further Recommended Reading, but not limited to:

- Franklin, E. (2004) Conditioning for Dance. Human Kinetics. Adelaide.
- Grossman, G. (2015) Dance Science: Anatomy, Movement Analysis, Conditioning. Princeton Book Company. Highstown, NJ.
- Marieb, EN. (2011) Essentials of Human Anatomy and Physiology. Tenth Edition. Pearson. Parkside, Australia.
- Solomon, R; Solomon, J; Minton, SC. (2005) Preventing Dance Injuries. Human Kinetics. Adelaide
- Welsh, T. (2009) Conditioning for Dancers. University Press of Florida. Gainsville, Florida.

Guest Speakers

- Physiotherapists
- Doctors
- Nutritionist
- Mentor

Method of assessment

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- Part A: 8 short answer questions covering learning outcomes 2-9. Answers approximately 200-400 words per question worth 10 marks each.

- Part B: 2 detailed answer questions covering learning outcome 1 and 1 other learning outcome randomly selected at the commencement of each year. Answers approximately 600-800 words per question worth 30 marks each.

- Part C: a 1500-2000 word essay whose topic may be selected from the suggested topic list or the candidate may submit a dance related anatomy topic of his or her own choice and is assessed by dual assessors

- Prior to submission of the Part C essay, the candidate is required to submit a 200 word outline to their allocated Mentor for suitability assessment

- Part A is marked out of 80 (8 short answer questions worth 10 marks each)

- Part B is marked out of 60 (2 detailed answers worth 30 marks each)

- Part C is marked out of 60

- An overall mark of 100+ is required to PASS this subject