BINDURA UNIVERSITY OF SCIENCE EDUCATION

FACULTY OF SCIENCE AND ENGINEERING

DEPARTMENT: SPORTS SCIENCE

MASTER OF SCIENCE DEGREE IN SPORTS SCIENCE

SS510 KINANTHROPOMERTRY

DURATION: 3 HOURS TOTAL MARKS: 100
(Plus 15 Minutes for Practical Preparation/Case Reading)

INSTRUCTIONS TO CANDIDATES

Section A is **compulsory.**

Answer **three** questions from Section B.

Section A

1. a) Distinguish between anthropometry and kinanthropometry (6 marks)

b) You are approached by a soccer coach and a boxing coach. Discuss how you could convince them to apply kinanthropometry in their coaching programmes.
(20 marks)

c) Expain key components to consider under "the subject "in anthropometry.
(14 marks)

Section B.

2 The main purpose of skinfold measurements is to estimate general fatness and the distribution of subcutaneous adipose tissue.

a) Define and describe the measurement of the triceps skinfold, the iliac crest skinfold and the front thigh skinfold. **(10 marks)**

b) Explain the main sources of error in the prediction of fat from skinfold data.

(10 marks)

3. Hydrodensitometry is widely used in determining body composition in sports science settings.

a) Describe the underlying principles and basic assumptions of hyrodensitometry.

(5 marks)

b) Table 1

variable	Thabo	Eric
Height	190cm	190cm
Weight of on land	93kg	93kg
Underwater weight	6.5kg	5.0kg
%BF	10.5%	18.4%

Use the information Table 1 above to calculate the subjects:

i) Body density **(3 marks)**
ii) Fat weight **(2 marks)**
iii) Fat-free weight **(2 marks)**
c) analyse the sources of error in underwater weighing. **(8 marks)**

4. Ssecular tendencies have been shown to be associated with human body form changes over time. Discuss the effects of secular tendencies on ergonomics, health and sport

(20 marks)

5. Body composition of athletes has been shown to affect sport performance in one way or another. With reference to a gravitational sport, an aesthetic sport and a weight class sport, analyse the relationship between body composition and sport performance.
(20 marks)

6. a) State the four ways used to determine the Hearth-Carter anthropometric somatotype. **(4 marks)**

b) Analyse the application of somatotype in elite sport. **(16 marks)**

END OF PAPER