



1st SEMESTER 2011/2012

PAGE 1 OF 2

UNIVERSITY OF SWAZILAND

FINAL EXAMINATION PAPER

**PROGRAMME: BACHELOR OF SCIENCE DEGREE IN AGRONOMY
YEAR 4**

COURSE CODE: CP 402

TITLE OF PAPER: BIOFUEL CROPS

TIME ALLOWED: TWO (2) HOURS

**INSTRUCTION: ANSWER QUESTIONS ONE AND TWO AND ANY
OTHER TWO (2) QUESTIONS OF YOUR
CHOICE**

**DO NOT OPEN THIS PAPER UNTIL PERMISSION HAS BEEN GRANTED
BY THE CHIEF INVIGILATOR**

QUESTION 1

[THIS IS A COMPULSORY QUESTION]

(a). Over 80% of the methane gas produced in Swaziland are from cattle, goats and pigs. Which of these three animals produces the most and the least amount of methane. Give reasons for your choice. How can the methane be harnessed for use?0 .
(14 Marks)

(b). Explain how conservation agriculture practices contribute to reduction of adverse effects of global warming in Swaziland

(14 Marks)

[28 Marks]

QUESTION 2

[THIS IS ALSO A COMPULSORY QUESTION]

Write briefly on the following (a to e). Each question carries four marks

- (a). Methods of planting cassava as a feedstock (4 Marks)
- (b). Process of converting sucrose to ethanol (4 marks)
- (c). Develop a SWOT analysis for the Royal Swaziland Sugarcane Corporation in ethanol production in Swaziland (12)
- (d). LUSIP (4 Marks)
- (e). Carbon tax (4 marks)

(28 Marks)

QUESTION 3

Discuss the opportunities and the challenges of using sweet sorghum (*Sorghum bicolor* L) as a feedstock for ethanol production in Swaziland.

(22 Marks)

QUESTION 4

Write an essay on rapid multiplication of cassava stems for ethanol production in Swaziland

(22 Marks)

QUESTION 5

SWADE plans to expand sugarcane production following a grant to farmers by the European Union. Discuss the possible effects of envisaged expansion of sugarcane production on water resources and food security. Suggest how perceived constraints can be addressed.

(22 Marks)