



JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE AND TECHNOLOGY  
SCHOOL OF EDUCATION  
UNIVERSITY EXAMINATION FOR THE DEGREE OF BACHELOR OF EDUCATION  
(SCIENCE)  
2<sup>ND</sup> YEAR 1<sup>ST</sup> SEMESTER 2019/2020 ACADEMIC YEAR  
REGULAR PROGRAMME  
MAIN CAMPUS

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COURSE CODE: ECT 311

COURSE TITLE: SPECIAL METHODS OF TEACHING MATHEMATICS

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**INSTRUCTIONS**

1. Answer Question ONE (compulsory) and any other TWO questions.
2. Candidates are advised not to write on the question paper.
3. Candidates must hand in their answer booklets to the invigilator while in the examination room.

1. (a) Identify the three common elements used in the definition of mathematics, then write any one definition of mathematics (6 marks)

(b) With a suitable example describe how a mathematics teacher can apply **Explicit** teaching method in a Mathematics class? (6 marks)

(c) Identify any three importance of introduction of a lesson and briefly demonstrate how you can introduce a mathematics lesson effectively (6 marks)

(d) Distinguish between inductive and deductive teaching strategies as used in the teaching and learning of Mathematics. (6 marks)

(e) Define a lesson plan and justify in brief any three factors teachers need to consider when writing a lesson plan to be used in the teaching and learning of Mathematics. (6 marks)

2. a) State and briefly explain any three (3) curriculum materials a teacher must fully familiarize himself/herself during the planning of a Mathematics lesson (6 marks)

b) Name any four Schools of Mathematical Philosophy and discuss what each advocates (14 marks)

3. Chose one topic from KCSE Mathematics syllabus and:

a). Plan a one-week mathematics schemes of work (10 marks)

b). Plan a 40 minute lesson plan from one lesson on the schemes of work (10 marks)

4. Chose any ONE of the instructional theories for teaching and learning Mathematics and Discuss its significance and show its implication to the teaching of secondary school mathematics (20 marks)

5. (a) Describe Robert Gagne's Nine Events of Instruction and show how you can adopt to teach any selected topic in KCSE Mathematics (12 marks)

b). Briefly Describe Madeline Hunter's Seven Step Lesson Plan MODEL (8 marks)