	hrs		/ /19			Exams Office Use Only

University of the Witwatersrand, Johannesburg

Course or topic No(s)	ELEN7015
Course or topic name(s) Paper Number & title	Teletraffic Engineering
Examination/Test* to be held during month(s) of (*delete as applicable)	September 2010
Year of Study (Art & Sciences leave blank)	Postgraduate
Degrees/Diplomas for which this course is prescribed (BSc (Eng) should indicate which branch)	MSc(Eng) and MEng
Faculty/ies presenting candidates	Engineering
Internal examiners and telephone number(s)	
External examiner(s)	
Special materials required (graph/music/drawing paper) maps, diagrams, tables, computer cards, etc)	Question and Answer Form for Part I

Time allowance	Course Nos	ELEN7015	Hours	3 hours

Instructions to candidates (Examiners may wish to use this space to indicate, inter alia, the contribution made by this examination or test towards the year mark, if appropriate)	See page 1

Internal Examiners or Heads of Department are requested to sign the declaration overleaf

Instructions

(a) This examination is three hours long and is divided into two Parts and periods:

    i. **Part I** is Closed Book. No information be brought into the examination for this period. Answer Part 1 on the Form provided. The maximum time for Part I is 45 minutes. The answer form for Part 1 must be handed in not later than 45 minutes after the start of the examination. The student may then leave the examination room for up to five minutes or proceed directly to Part II.

    ii. **Part II** is Open Book. A student must commence Part 2 not later than 50 minutes after the start of the examination. The issued course notes, not personal handwritten ones must be brought to the examination. No other reference material may be used. In Part II the logic behind the answer to each question must be explained. For this part of the examination you may provide and use computational aids, for example a scientific or programmable calculator or a laptop computer with Octave installed. You should be equipped to perform Erlang B, Erlang C and queueing theory calculations as well as general mathematical formulas. Erlang B traffic tables will be available in the examination room. The following paper will provide the basis for one question: V.S. Abhayawardhana, R. Babbage,*A Traffic Model for the IP Multimedia Subsystem (IMS)*.

(b) All questions may be attempted. The total available marks for Parts I and II is 120. One hundred marks = 100%.

(c) This examination tests the following outcomes:

    i. Display literacy in the basic concepts and principles of teletraffic engineering.

    ii. Use standard abstractions, tools and techniques.

    iii. Apply the fundamental concepts and principles to solve problems in teletraffic.

    iv. Apply standard calculations.