Stellenbosch University
Department of Electrical and Electronic Engineering

Digital Systems 144
Study Guide - 2005

Module Information

Home department: Department of Electrical and Electronic Engineering

Year 1, Semester 2

Study load: 2 lectures and no practical / tutorial per week

Lecturer: Prof PJ Bakkes (Room E414, telephone 808-4335, e-mail: bakkes@sun.ac.za)

Classification of knowledge areas: Engineering science = 15%, Design and synthesis = 70%, Computation and IT = 15%.

Assessment (see Calendar Parts 1 and 11 for regulations):
Method: examination;
Calculation of class mark: class tests and optional parachute test;
Achievement Mark = 0.4C + 0.6E

Content of module

Boolean algebra, combination circuit design at gate level with MSI components, synchronous sequence circuit design, programmable logic, introduction to microprocessors.

Text book

Brown S, Vranesic Z, **Fundamentals of Digital Logic with VHDL design**, McGraw-Hill 2003

Practical and tutorials

Attendance of all practical and tutorial sessions is compulsory – absence without a valid reason could result in an “uncompleted” class mark, which would prevent you from writing the examination. The signature of one of the lecturers or assistants is your proof that you were

present at a practical or tutorial. In the case of a practical or tutorial not being satisfactorily completed as a result of illness or for any other reason, the student should contact the lecturer as soon as possible to make suitable arrangements.
The practical and tutorials are held in two laboratories, the Electronics laboratory and the Electrotechnology laboratory at the Department. The Electronics laboratory (4th floor) can accommodate 60 groups of 2 students per group and the Electrotechnology laboratory (2nd floor), 30 groups of 2 students per group.

Choose a fellow student to work with, as well as a workbench in one of these laboratories to work at. Please keep to your choices for the duration of the module.

Tests and examinations

Evaluation in this module is by means of closed book tests and examinations. The use of pocket calculators is not allowed in either the tests or examinations. See the general University rules with regard to re-evaluation and certification of illness.

Specific outcomes and assessment criteria

On successful completion of this module a student should be able to design, build, test, analyze, debug and simulate basic logical combination circuits and sequential circuits.

The exercises at the end of every chapter of the text book, as well as those given in class, in practical and tutorials should serve as an indicator of the level of insight expected of the student in this module.

All transparencies used by the lecturer in class are available on the web page for this module, (http://courses.ee.sun.ac.za). The content also indicates which sections of the text book may be regarded as having been covered for purposes of the module.
