UNIVERSITY OF SUNDERLAND

SCHOOL OF COMPUTING AND TECHNOLOGY

MODULE CODE:	COMM 3D
MODULE TITLE:	Network Management
MODULE ASSESSOR:	Banie Amin
ASSIGNMENT	two
TITLE OF ASSIGNMENT:	Applications of SNMP

PLEASE READ ALL INSTRUCTIONS AND INFORMATION CAREFULLY.

This assignment contributes 40% to your final module mark.

Please ensure that you retain a duplicate of your assignment. We are required to send samples of student work to the external examiners for moderation purposes. It will also safeguard in the unlikely event of your work going astray.

THE FOLLOWING LEARNING OUTCOMES WILL BE ASSESSED:

(a) Critical knowledge of SNMP and its applicability as a network management tool.

(c) Critical understanding of the architecture, implementation and operational use of current approaches to management – OSI/TMN and SNMP and the interpolation between these approaches and the use of stand alone tools such as protocol analyzers.

(e) Analyze and implement the latest protocol information and troubleshooting strategies to improve network performance.

(f) Use protocol analyzer to measure the baseline throughput and latency, identify bottleneck in the networks and determine the server and client response times.

IMPORTANT INFORMATION

You are required to submit your work within the bounds of the University Infringement of Assessment Regulations (see your Programme Guide). Plagiarism, paraphrasing and downloading large amounts of information from external sources, will not be tolerated and will be dealt with severely. Although you should make full use of any source material, which would normally be an occasional sentence and/or paragraph (referenced) followed by your own critical analysis/evaluation. You will receive no marks for work that is not your own.

Where you are asked to submit an individual piece of work, the work must be entirely your own. The safety of your assessments is your responsibility. You must not permit another student access to your work.

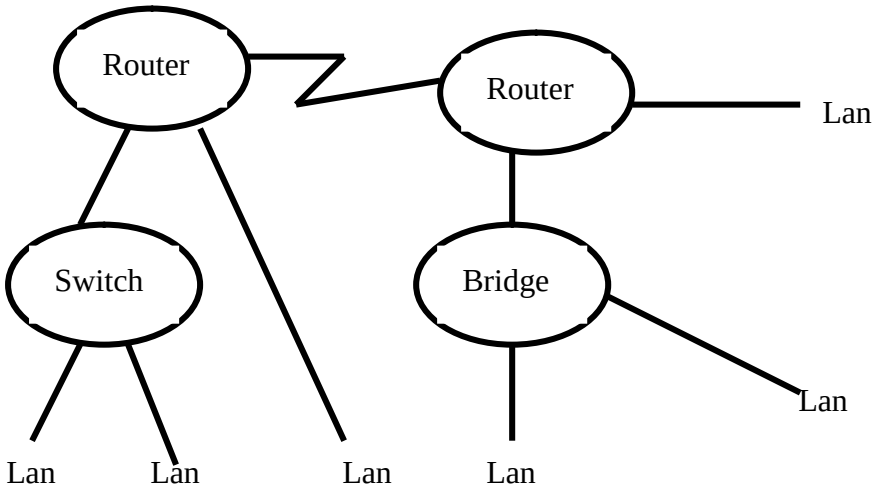
Where referencing is required, unless otherwise stated, the Harvard referencing system must be used (see your Programme Guide).

Submission Date and time	
Submission Location	LRC, Reg Vardy Building

Assignment 2

The object of this assignment is assessing the skills of using SNMP tools of designing network management capabilities and analysing management parameters.

An enterprise network is structured as Ethernet segments connected by routers, switches and bridges as shown in the following diagram.



Lans have workstations, fileservers, print servers, etc. Draw a schematic network diagram for this example and name Managed Object Classes (MOCs) and their pertinent attributes. Draw the Inheritance tree and the Naming tree. The example network needs to be complicated enough to demonstrate your understanding of MOCs and trees.

(20% marks)

Design MIBs for the Routers, Switch and the Bridge. The purpose of the MIB is to gather the necessary data, so that one can make a well-founded decision about expanding or making the network better. Describe the MIB with the ASN.1 notation found in the standard text books.

(25% marks)

Web-based management and Desktop Management Interface

Critically analyse and evaluate the above two management techniques in campus network environment in place of traditional network based management regime. Particular attentions must be given to the security issues.

(30% marks)

Suppose now you have decided to use IPv6 instead of IPv4. Explain what would be the benefits of these and how you would implement the transition. Give a critical analysis of the limitations it might impose and the opportunities it might provide for the efficient management of the network.

(25% marks)

Marking scheme:

> Written individual reports:
> Maximum 3000 words. Reports will be marked based on the quality of presentation, research, conciseness, accuracy, completeness and proper referencing (where applicable).

A - 70% and above

- Thorough understanding of key theories and distinguishing features and trends within the chosen field.
- Overview of the field used as a basis for independent judgement.
- Clear structure and critical analysis. + as (B)

B – 55-69%

- Accurate description (where relevant) and understanding of the chosen field;
- Reasonable understanding of interpretative analysis within the field;
- Evidence of use of background knowledge and reading;
- Sound structure and good 'flow';
- Presence of some critical evaluation;
- Demonstration of knowledge across substantive areas, where appropriate.

C – 40-55%

- Evidence of understanding of the distinguishing features of the chosen field;
- Some use of essential conceptual tools;
- Adequate structure;
- Evaluative conclusion;
- Question analysed and most material relevant to the field;
- Some reading in evidence and appropriately incorporated.
- Grasp of basic issues in substantive areas;

F - 39% or less

- Long on description with little or no analysis or evaluation;
- Theoretical positions confused;
- Little evidence of use of conceptual tools or of reading;
- Irrelevant, unrelated and muddled

Submission procedure: Submit your answers of all the above items in one document. Late submission will not be marked.

Module leader: Banie Amin