A12

Lab Report (Final)

In this assignment, you will write a full technical report based on the Chaotic Oscillator part of the X3 and X4 laboratories you have undertaken.

Schedule

Suggested time : 15 hours

Items provided

Tools : n/a

Components : n/a

Equipment : n/a

Software : n/a

Items to bring

n/a

This is an individual assignment, and you should not do it with your lab partner or colleagues. This document outlines the details of the assignment.

Academic Integrity – *This assignment is an individual exercise, and you should prepare for it and write it on your own. You may want to use sources from the internet or books to help complete the assignment. Ensure that you cite such sources appropriately.*

Revision History

February, 17, 2014	Nicolas Green (ng2) Geoff Merrett (gvm)	Minor updates for 2013/14
March 08, 2013	Nicolas Green (ng2) Geoff Merrett (gvm)	New assignment for 2012/13

1 Aims, Learning Outcomes and Outline

The aims of this assignment are:

- To give you experience of writing up your work in a clear and concise manner.
- To give you experience of writing analytical statements with justified conclusions.

Having successfully completed this assignment, you will be able to:

- Write concise and effective technical reports.

In this assignment, you will write a full technical report based on the Chaotic Oscillator part of the X3 laboratory you undertook last semester (that you will have a second chance to attempt in lab X4). Your report must be submitted before the *submission deadline*, standard University late penalties will apply for any submissions after this. Your technical report will be marked, and feedback provided.

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2 Preparation

To prepare for this assignment you must have attended and carried out labs X3, X4, X10, and have watched the Technical Writing and Academic Integrity online lectures (L12, L13, L16).

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3 The Assignment

As written assignments are an essential part of professional and student life, the feedback you gain from this assignment will be invaluable in developing this aspect of your skill set. The purpose of this assignment is to engage with the process of taking experimental and other forms of data and developing it for presentation in a written form. You must submit three documents before the submission deadline:

1. Your technical report (maximum 4 sides of A4), submitted as a pdf;
2. Your reflection statement (maximum 1 side of A4), submitted as a pdf;
3. A scanned copy of your mark/feedback form from assignment A10, submitted as a pdf.

Technical Report: For this assignment, you will write a four-page report about the Chaotic Oscillator that you investigated in labs X3 and X4. Your report should be formatted according to the formatting template shown at the end of this document (note that this is the same as that used in lab X10). Your report should have a full technical report structure: abstract, introduction, background/theory, experimental methods, results, discussion, conclusions, and references. You should write a clear description of the experiment according to the discussions and lecture material, and you should apply the skills and techniques you learnt in lab X10 to find and engage with other relevant literature.

Reflection Statement: You should also submit an additional one-page reflection statement, which compares this assignment to your A10 assignment (Results and Discussion). You should talk about the changes that you have made, and the reasoning behind the changes and why they produce a better report.

All page limits must be adhered to, and these limits include any tables or figures. Any text exceeding this limit will not be assessed. More specific concepts about content and aspects of writing can be found by examining the marking scheme in more detail (see below).

Academic integrity: The standard University rules on academic integrity will be applied to this assignment. Marks and feedback will reflect this procedure for the purpose of discussion in the event of a breach. *This will include a permanent mark on your student record.*

3.1 Mark Scheme

The marks breakdown is as follows:

Mark section	Marks (%)	Comments
Abstract	10	A short focused abstract of <100 words
Introduction	10	Remember the context and the "*why*"
Background/Theory	10	Focus only on relevant background
Experimental Methods	10	Stick to a description of the setup and analytical methods used
Results	10	Describe the results clearly and succinctly
Discussion	10	Remember that this section contains no results
Conclusions	10	Summarise your conclusions and put them in context
References and Citing	10	Clear distinct reference structure/list. Marks and feedback here will cover appropriate use of citation in the text and issues surrounding academic integrity.
Writing and Grammatical Structure	10	The specifics of the text as written, the correct use of grammar, sentences, and paragraphs. Additional consideration will be given to the clarity in the choice of wording.
Reflection	10	This should focus on the changes from the previous Results and Discussion document and why you made them.

Formatting Guidelines for EEE Laboratory Assignments (the report title, 28pt, Times, centred, 25pt line space after)

Joe Bloggs (your name, centred, Times, 11pt)
jb1v07@ecs.soton.ac.uk (your email, centred, italic, Times, 10pt)
Personal Tutor: Professor Bloggs (your tutor, centred, italic, Times, 10pt, 25pt line space after)

Abstract: This is the abstract text, and should be limited to under 150 words. It is important that your abstract makes sense on its own – hence it should not include any references or refer to tables or figures in the document. The text "Abstract:" should be included in the margin, while the abstract itself should be indented by 2cm. The abstract should be justified to both margins, in Times or Times New Roman, size 10pt, with 1.05x line spacing. A 25pt line space should be left between the abstract and the report body.

1. Introduction (12pt Times Bold)

Section headings should be in Times or Times New Roman, size 12pt, bold. The section number should be aligned with the left margin, and the section heading tabbed in 0.75 cm. A space of 10pt should be left before and after a section heading.

Subsection headings should be as section headings, except size 10pt, with a spacing of 6pts before and after.

Line spacing of 1.05x should be used throughout the document. The main body text should be size 10pt Times or Times New Roman, and be justified to both margins. A spacing of 6pt should be inserted between paragraphs.

2. Page Layout and Margins

A4 paper should be used and the margins should be set to 2 cm left and right, and 2.5 cm top and bottom. The body of the document should be split into two columns, with a 0.7 cm spacing between them. If a total word length is specified in the assignment, it should be adhered to (but excludes the title, author details, abstract and references).

Pages should be numbered sequentially in Times New Roman size 10, right-justified in the footer of each page (where the footer is 1.25cm from the edge of the page).

3. Figures, Tables and Equations

Figures (graphs, diagrams, photographs, etc.) should be computer generated or scanned in. They should be centred within the column (or span both columns), and a centred caption should appear below the figure in Times New Roman 9pt. The caption should begin with the word 'Figure' and be followed by the figure number. Figures should be numbered sequentially with Arabic numerals. The caption should give a general description of what the figure is (e.g. "The voltage across resistor 13 vs. time"), explain any symbols or line densities concisely (for example "the solid line represents the modelled relationship; triangles are observed data points"), and give other essential information pertaining to the figure. All figures should be referred to in the text, for example "the system architecture is shown in Figure 1".

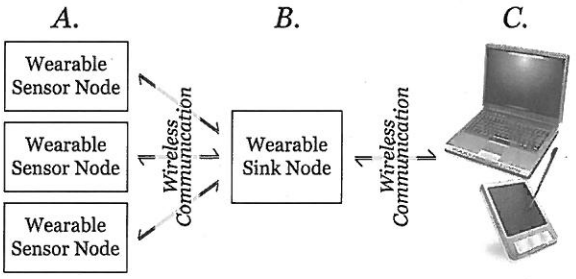

Figure 1: System architecture of the proposed BSN

A figure should have a 10pt line space before it, a 5pt line space between the bottom of the figure and its caption, and a 10pt line space underneath the caption.

Tables should be self-contained, clearly labelled and accompanied by a sequentially numbered caption that appears above the table in Times New Roman 9pt. Table captions should appear above the table, with a 12pt line

space before it, a 6pt line space between the bottom of the caption and the figure, and a 12pt line space underneath the table. All tables should be referred to in the text, for example (Table I). Roman numerals should be used (Table I, Table II, etc.). Tables should be formatted using Table I as a template.

Table I: Example table.

Col 1	Col 2	Col 3	Col 4	Col 5
Row 1	a	b	c	d
Row 2	e	f	g	h
Row 3	i	j	k	l

Variables appearing in the text and in equations should be in italics. If an equation is complex, display it centred with 1 line of 6 pt spacing above and below it; displayed equations should be numbered sequentially in Times 10pt, with an Arabic numeral placed in brackets right-justified, as shown in (1).

$$(1 + x)^n = 1 + \frac{nx}{1!} + \frac{n(n-1)x^2}{2!} + \cdots \qquad (1)$$

You should explain all parameters in the text.

4. Citing and Listing References

4.1 When and How to Cite (10pt bold)

Information that you obtained from other works needs to be identified within your paper, and full bibliographic data given for it. Within the text, use a brief way of citing the reference so that the reader can find the complete bibliographic details in the list of references at the end. There are several standard systems for citing references and for ordering the information in the list of references; the following specifies the system you should use either for your assignment.

When citing references within the text (or in a figure caption), number these sequentially using square brackets e.g. [9]. Then, list all cited references at the end of the report, under the heading References, again, in numerical order.

If a figure is copied from another source, state at the end of its caption, "(reprinted from [9])". If a figure from another source is used but you have substantially adapted it for your own purposes, state at the end of its caption, "(adapted from [9])"

If you paraphrase, i.e. restate in your own words some part of another work, do not use quote marks, but place the citation(s) at the end of the sentence(s). If you use an exact quote, enclose it in quotation marks, and place the citation either just before or just after the quotation. For example, Yang and Stone [6] state, "Ultrasound imaging has been used to assess ... tongue surface shapes." If you omit the citation, you are passing off their work as yours. If you cite them, but omit the quotation marks, you are giving them some credit, but representing their wording and flow of logic as your own. Both constitute a form of plagiarism; don't do it. Give other authors credit, and give credit properly.

If your original source was from the Web, include the URL in the reference, but search for as much other information as you can find on the web site; URL's can change rapidly. If what you read on the web site was a paper that is published elsewhere (for instance, in a journal that is both paper and on-line, or in conference proceedings), find out all of the information pertaining to the paper publication, and cite that. In other words, find out the authors' names, the title, the name of the conference, date it was held, the page numbers and any other numbers (volume, part) that apply. If the material seems to be only on the web site, list as much information as you can deduce. For instance, if you find course notes for a course at some distant university, search for the name of the person who wrote the notes, their department's name, the university name and location, etc.

Sometimes no individual is listed as author; it may be appropriate in such cases to list the institution, or the publisher, in place of the author above. This could be the case for an on-line encyclopaedia, the web site of a well-known museum, or an entity such as NASA. Adapt the format above if need be. Realize that you may have to hunt a bit: link to the homepage of the author, find out which country a university is in, and so on. But consider: if you can't find any or most of this information, should you be trusting that source?

4.2 Reference Formats

Format your references using the IEEE guidelines (a detailed description is available from http://www.ieee.org/documents/ieeecitationref.pdf.

References

References should be accompanied by a sequential number in square brackets flush with the left margin. The reference itself should be 0.7cm from the left margin, Times 9pt, and justified to both margins. There should be no line spacing in between references.

All references should appear in this 'References' section. Footnotes should not be used in the text to refer to sources.

[1] B. Klaus and P. Horn, Robot Vision. Cambridge, MA: MIT Press, 1986.

[2] L. Stein, "Random patterns," in Computers and You, J. S. Brake, Ed. New York: Wiley, 1994, pp. 55-70.

[3] R. L. Myer, "Parametric oscillators and nonlinear materials," in Nonlinear Optics, vol. 4, P. G. Harper and B. S. Wherret, Eds. San Francisco, CA: Academic, 1977, pp. 47-160.