

Final Report Guidelines for EECE 532

First A. Author

Abstract— This project is your most significant assignment for the course. As indicated on the course website, this project is worth 40% of the overall course grade. The purpose of this assignment is to provide you with an opportunity to demonstrate your understanding of a specific area of bioMEMS. The formal report should present an investigation into an area of biomedical microdevices. A review paper would involve critical analysis of current literature in the chosen topic of biomedical microdevices. The report topic must be approved by the instructor; it may not be changed without the instructor's permission. A hard copy of the final report must be submitted to the instructor. In addition, an electronic copy must be uploaded to www.turnitin.com. The final report should be approximately 5 pages in length using the IEEE style sheet.

Index Terms—BioMEMS report guidelines

I. INTRODUCTION

THIS project is your most significant assignment for the course. As indicated on the course website, this project is worth 40% of the overall course grade.

You will choose a suitable topic and you will submit a one page proposal to the instructor. Once this topic is approved by the instructor, it cannot be changed without instructor approval. Remember that during the term you must research, write and submit an original report prepared for EECE 532 only.

The purpose of the report is to present an investigation into an area of biomedical microdevices. This could be a review of recent journal papers, with critical discussion of the work. Your research methods will include library research. Some projects may include further experimental results or simulations.

Examples of review papers include:

R. Bashir, "BioMEMS: state-of-the-art in detection, opportunities and prospects," *Advanced Drug Delivery Reviews*, vol. 56, pp. 1565-1586, 2004. [1]

T. M. Squires and S. R. Quake, "Microfluidics: Fluid physics at the nanoliter scale," *Reviews of Modern Physics*, vol. 77, pp. 977-1026, 2005. [2]

K. D. Wise, D. J. Anderson, J. F. Hetke, D. R. Kipke, and K. Najafi, "Wireless implantable microsystems: high-density electronic interfaces to the nervous system," *Proceedings of*

the IEEE, vol. 92, pp. 76-97, 2004. [3]

K. Asami, "Characterization of heterogeneous systems by dielectric spectroscopy," *Progress in Polymer Science*, vol. 27, pp. 1617-1659, 2002. [4]

J. D. Weiland, W. Liu, and M. S. Humayun, "Retinal Prosthesis," *Annual Review of Biomedical Engineering*, vol. 7, pp. 361-401, 2005. [5]

The audience for the report will include expert(s) in the field, your course instructor, and other students in your class. You may assume that an expert knows the topic quite well, the course instructor is somewhat familiar with your topic, and EECE 432/532 students have a layperson's understanding of the topic.

The final report should be approximately 5 pages in length. Do not change the font size, spacing, or margins to meet this criterion.

II. LEARNING OBJECTIVES

The main objective for this project is to provide you with an opportunity to investigate an area of BioMEMS that interests you. The topic may have been discussed in class but this project gives the student an opportunity to explore the area in more depth and detail.

By the end of this project, you will be able to critically evaluate the current literature in this topic, compare biomedical microdevices with current macroscale systems (if any), and discuss reasons for miniaturization.

III. ASSIGNMENT SPECIFICATIONS

The report content should be technical in nature and delivered in well-developed sentences and coherent paragraphs. Your report should demonstrate appropriate detail and wording for each of the three kinds of audience: experts in the field, your instructor, and your peers in class. You should carefully consider their knowledge level and informational needs. Your writing style throughout the report should be clear and concise, and the tone should be formal, objective and positive.

The main parts of a formal report are the introduction, discussion sections, the conclusion(s), and the list of references.

A. Abstract

The abstract provides an overview of the entire project. It states the problem, purpose and scope for the project, mentions methods used to collect information, and presents results and conclusions. The findings presented in the abstract

Report submitted on (Due Date).

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should correlate evenly to the sections of the report, and should be reported concisely and objectively. The abstract should be approximately 200 words in length.

B. Introduction

This section indicates the purpose for the report, its background, significance, audience, scope, methodology and organization. It is important to develop a clear statement of purpose and to demonstrate that you have delivered what you had agreed to deliver in the proposal.

C. Discussion

The body or discussion sections develop and support the information you provide in the introduction. When writing these sections, carefully review content and organization, style, paragraph structure, punctuation and mechanics. Include detail as appropriate. You should also pay attention to the integration of graphic aids and the use of headings/subheadings.

Plagiarism is the act of copying other people's written words or ideas without proper referencing. Plagiarism includes failure to cite quotations and borrowed ideas, failure to enclose direct quotations in quotation marks, and failure to put summaries and paraphrases in your own words.

Use the standard IEEE format for in-text citations and the reference list.

A direct quote should be enclosed in quotation marks followed by the citation. Quotation marks acknowledge that the text uses the author's exact original words.

The following examples show plagiarism because the direct quotations and borrowed ideas are not cited.

Original text:

The devices and integrated systems using BioMEMS are also known as lab-on-a-chip and micro-total analysis systems (micro-TAS or μ TAS). The word is now used very broadly and devices which do not have any electro-mechanical components, such as DNA and protein arrays (described briefly in the following sections), are also sometimes categorized under BioMEMS.

from: R. Bashir, "BioMEMS: state-of-the-art in detection, opportunities and prospects," *Advanced Drug Delivery Reviews*, vol. 56, pp. 1565-1586, 2004.

Example 1: Plagiarism using a direct quote – no quotation marks, no citation:

The devices and integrated systems using BioMEMS are also known as lab-on-a-chip and micro-total analysis systems (micro-TAS or μ TAS). The word is now used very broadly and devices which do not have any electro-mechanical components, such as DNA and protein arrays, are also sometimes categorized under BioMEMS.

Example 2: Plagiarism using a direct quote – quotation marks, no citation:

"The devices and integrated systems using BioMEMS are

also known as lab-on-a-chip and micro-total analysis systems (micro-TAS or μ TAS). The word is now used very broadly and devices which do not have any electro-mechanical components, such as DNA and protein arrays, are also sometimes categorized under BioMEMS."

Example 3: Correct citation

"The devices and integrated systems using BioMEMS are also known as lab-on-a-chip and micro-total analysis systems (micro-TAS or μ TAS). The word is now used very broadly and devices which do not have any electro-mechanical components, such as DNA and protein arrays [...], are also sometimes categorized under BioMEMS" [1].

Direct copy-and-pasting of entire paragraphs, even using quotation marks, is not recommended. While credit has been given to the original source, excessive direct quotation of various styles and language will break the flow of the report.

Review papers often include summaries of entire papers presenting experimental work. These short summaries comprising a few sentences may highlight the methods, results, or significance of the work. Such summaries must also cite the original work.

A borrowed idea, a form of paraphrasing, should be followed by the citation.

Example 4: Plagiarism using a borrowed idea – paraphrasing with no citation:

BioMEMS are also called lab-on-a-chip or micro-total analysis systems. The term BioMEMS covers a wide range of devices, even those which do not have any electro-mechanical components.

Example 5: Correct citation

BioMEMS are also called lab-on-a-chip or micro-total analysis systems. The term BioMEMS covers a wide range of devices, even those which do not have any electro-mechanical components [1].

D. Conclusion

This section draws together all main points of your report. The conclusion does not present any new information but addresses the following questions: a) what are the main findings of the project; b) what should be done next; c) where can the reader get more information, if necessary.

E. References

Your formal report will be based on the ideas, words and data of other researchers and experts in the field, so you must acknowledge all your sources. Immediately after the CONCLUSION, provide a separate list with complete bibliographic information for all sources you quote, paraphrase, or summarize in your report so that readers can find the same sources. The list is titled REFERENCES.

References should include scientific papers from peer-

reviewed journals. Do not include references you have not read yourself. The instructor may ask you to provide copies of your references. Citation of irrelevant sources reduces the credibility of your report.

Wikipedia is an openly editable work and is not considered to be an appropriate reference for this report.

Use the standard IEEE format for in-text citations and the reference list.

Number citations consecutively in square brackets [1]. The sentence punctuation follows the brackets [2]. In sentences, refer simply to the reference number, as in [3]. Do not use “Ref. [3]” or “reference [3]” except at the beginning of a sentence: “Reference [3] shows” A general IEEE style guide and an *Information for Authors* are both available at <http://www.ieee.org/web/publications/authors/transjnl/index.html>

IV. HINTS

In this section you will find detailed information about the procedure for submitting the formal report and the evaluation criteria.

A. Report Submission

A hard copy of your report must be submitted no later than the deadline specified in the course syllabus. No requests for extensions will be granted.

In addition, you must submit an electronic copy of the report to www.turnitin.com. Follow the instructions for direct online submission at:

<http://www.vpacademic.ubc.ca/integrity/turnitin/students.htm>

The file name should be *yourfirstname_yourlastname.pdf* or *yourfirstname_yourlastname.doc*.

B. Evaluation Criteria

Your report will be evaluated according to the following criteria:

Abstract

- Have you summarized the main points of the report?
- Are major findings summarized?
- Have you avoided referring the reader to the report?
- Have you revised the abstract to make it as concise and coherent as possible?

Introduction

- Have you put this report into the context of previous work?
- Is the purpose and background information included?

Discussion Sections

- Have you cited the sources of all your information?
- For a review paper, have you critically assessed the material from the various sources?

Conclusion

- Does the conclusion draw together all main points of your report?

- Does the conclusion address the following questions:
 - a) what are the main findings of the project;
 - b) what should be done next;
 - c) where can the reader get more information, if necessary?

Graphics

- Does each table or figure have an informative title?
- Are figures labeled below and tables above?
- Are the columns of tables labeled completely and the units of measurement indicated?
- Are the axes of graphs labeled completely and the units of measurement indicated?
- Is the source of data acknowledged if it is not your own?
- Are all the graphics referred to in the text of the report?

References

- Have you used the IEEE system for in-text citations?
- Is the reference list complete and properly formatted?

REFERENCES

- [1] R. Bashir, "BioMEMS: state-of-the-art in detection, opportunities and prospects," *Advanced Drug Delivery Reviews*, vol. 56, pp. 1565-1586, 2004.
- [2] T. M. Squires and S. R. Quake, "Microfluidics: Fluid physics at the nanoliter scale," *Reviews of Modern Physics*, vol. 77, pp. 977-1026, 2005.
- [3] K. D. Wise, D. J. Anderson, J. F. Hetke, D. R. Kipke, and K. Najafi, "Wireless implantable microsystems: high-density electronic interfaces to the nervous system," *Proceedings of the IEEE*, vol. 92, pp. 76-97, 2004.
- [4] K. Asami, "Characterization of heterogeneous systems by dielectric spectroscopy," *Progress in Polymer Science*, vol. 27, pp. 1617-1659, 2002.
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