

# PSI: Professional Issues Essay

Writing for College of  
Science and  
Engineering  
Students



[gla.ac.uk/myglasgow/sld/](https://gla.ac.uk/myglasgow/sld/)

Student Learning Development

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# Today

We will look at:

- ▢ Understanding essay questions
- ▢ Structure
- ▢ Argumentation
- ▢ Writing quality/tone/style

**You can get most of the way there  
by following procedures**

## Stages of writing an essay

1. Understand/refine the question
2. Background research
3. Formulate your argument
4. Plan structure
5. Write
6. Proofread

## Writing Topics (1)

- 1. Understanding Essay Questions***
2. Structure
3. Argumentation
4. Writing quality/tone/style

# Comparing essay topics

1. In 2018, the United States Securities and Exchange Commission charged Theranos Inc, Elizabeth Holmes and Ramesh Balwani. What IT professional issue(s) were raised in this scenario?
  2. In 2018, Apple Inc. sued former senior platform architect Gerard Williams III. What IT professional issue(s) were raised in this scenario?
  3. In 2021, Dominion Voting Systems sued Rudy Giuliani. What IT professional issues(s) were raised in this scenario?
- What are the commonalities between these questions?
  - Looking at the commonalities, what information do you think you're supposed to deliver?
  - What do you think the target of this essay is?

# Learning about expectations elsewhere...

**Table 2: Marking scheme for final essay**

Grade (band)	Argument and conclusion (weight 2/6)	Evidence and Issues (weight 2/6)	Quality of writing (weight 1/6)
A (A1-A5) excellent	argument is highly persuasive, clearly acknowledging alternative positions; conclusion follows logically from argument	ample relevant reliable evidence; all key issues are addressed effectively	very well structured; highly literate

## Intended Learning Outcomes (ILOs)

By the end of this course students will be able to:

- Identify the principal social, ethical, legal, and professional issues in information technology (IT);
- Explain the laws and codes of conduct relevant to the IT industry, and relate them to examples of IT in practice;
- Use analytical tools to break down complex ethical issues in IT;
- Develop and present arguments on social, ethical, legal, and professional issues in IT;
- Constructively criticise the arguments of others.



## Expectations for Professional Issues essay

- Your essay should ***inform*** on a CS/SE issue in a way that's understandable to your classmates
- It should take a ***stance***. You should develop and demonstrate your own professional/academic opinion
- You should demonstrate your **communication** and **critical thinking** skills



Structure  
Argumentation  
Writing quality

## Writing Topics (2)

1. Understanding Essay Questions
- 2. *Structure***
3. Argumentation
4. Writing quality/tone/style



## How should an essay be structured?

- Intro (10%), main body (80%), conclusions (10%)
- For an essay of a few thousand words where specific questions are given – no research statement, abstract etc
- (Check for subject/course-specific requirements)

# Introduction

- Start broad (context), move towards specificity
- Why is this specific issue/case worth discussing?
- What are you going to address, and why?

## Main body

- Consider grouping your findings by **key themes**
- Order them so that they lead naturally through the text (presume “educated peer” level knowledge)
- Think about what background knowledge your reader has and lead them through the content logically

# An example of structure – James (1)

Here is an example from my thesis:

1. Introduction
2. Preliminaries
3. Theory
4. Application 1
5. Application 2

# An example of structure – James (2)

1. Introduction: TT-Geometry is powerful and interesting
2. Preliminaries: All of the algebra and category theory we need
3. Theory: All of the theoretical results, completely abstracted
4. Application 1: Apply all of the theory to a particular example
5. Application 2: Apply all of the theory to a particular example

# An alternative structure – James (1)

I could have structured it differently!

1. Introduction
2. Preliminaries
3. Introduce examples
4. A little bit of theory
5. Application to both examples
6. Repeat from step 4

# An alternative structure – James (2)

1. Introduction: TT-Geometry is powerful and interesting
2. Preliminaries: All of the algebra and category theory we will need
3. Introduce examples: We care about derived categories and lattices
4. A little bit of theory: Prove one little result
5. Application to both examples: Apply the result to both examples
6. Repeat from step 4



# Conclusion

- ▢ ***Summarise*** the main ideas
- ▢ ***Provide an answer to*** the question.  
Take a stance.
- ▢ (Possible ***future directions...***)
- ▢ No introducing new material in the conclusion

## Writing Topics (3)

1. Understanding Essay Questions
2. Structure
- 3. *Argumentation***
4. Writing quality/tone/style

# Argumentation

- ▢ You need to present complex legal and moral issues
  - ▢ Clearly
  - ▢ Taking a stance
- ▢ You can say anything you want in academic writing – provided you can support it
  - ▢ Typically this means using papers
  - ▢ What else might it mean in this context?
  - ▢ When using other types of media – credibility?

# Voicing your academic opinion (1)

What we often see:

*The authors claim to have shed light on the development of language in children, however the research is flawed because the balance of male to female participants included in the study was not equal.*

- This doesn't fully convey your understanding of the issue.
- Why does the identified strength/ flaw matter to research quality?

## Voicing your academic opinion (2)

*The authors claim to have shed light on the development of language in children; however, the research is flawed because the balance of male to female participants included in the study was not equal. The study included 34 male and 4 female participants. In addition to the sample not being representative of the population it is applied to, previous research has established that there are sex-based differences in the rate of social development in children (French, 2019). So, while the findings of the authors may apply to language development in male children, the same conclusions cannot be applied to female children.*

# Structuring an argument

- Statement
- Evidence
- Deduction/conclusion
- Extrapolation

## Voicing your academic opinion (3)

**The authors claim to have shed light on the development of language in children; however, the research is flawed because the balance of male to female participants included in the study was not equal.** The study included 34 male and 4 female participants. In addition to the sample not being representative of the population it is applied to, previous research has established that there are sex-based differences in the rate of social development in children (French, 2019). So, while the findings of the authors may apply to language development in male children, the same conclusions cannot be applied to female children.



## Voicing your academic opinion (4)

The authors claim to have shed light on the development of language in children; however, the research is flawed because the balance of male to female participants included in the study was not equal. **The study included 34 male and 4 female participants.** In addition to the sample not being representative of the population it is applied to, previous research has established that there are sex-based differences in the rate of social development in children (French, 2019). So, while the findings of the authors may apply to language development in male children, the same conclusions cannot be applied to female children.

## Voicing your academic opinion (5)

The authors claim to have shed light on the development of language in children; however, the research is flawed because the balance of male to female participants included in the study was not equal. The study included 34 male and 4 female participants. **In addition to the sample not being representative of the population it is applied to, previous research has established that there are sex-based differences in the rate of social development in children (French, 2019).** So, while the findings of the authors may apply to language development in male children, the same conclusions cannot be applied to female children.

## Voicing your academic opinion (6)

The authors claim to have shed light on the development of language in children; however, the research is flawed because the balance of male to female participants included in the study was not equal. The study included 34 male and 4 female participants. In addition to the sample not being representative of the population it is applied to, previous research has established that there are sex-based differences in the rate of social development in children (French, 2019). **So, while the findings of the authors may apply to language development in male children, the same conclusions cannot be applied to female children.**

## Writing Topics (4)

1. Understanding Essay Questions
2. Structure
3. Argumentation
- 4. *Writing quality/tone/style***

Academic  
writing should  
be

- Clear
- Concise
- Unbiased
- Focused
- Accurate
- Appropriately cautious

# Clear

- Complex concepts – simple articulation
- Check that your reader doesn't have to look elsewhere in your writing (or at another source)
  - Logical ordering
  - “Educated peer” assumption
- Check that your reader doesn't have to make assumptions about what you mean to say.

# Concise

- Get to the point quickly
- Omit needless words
- Never use a long word where a short one will do



# Unbiased

- Convince people using facts and data, not using persuasive language
- Use appropriate hedging language when talking about how convinced you are by the evidence
- Don't push data/findings to fit your stance/hypothesis

# Focused

- ▢ Science writing should have a clear purpose that is indicated at the outset.
  - ▢ Make sure YOU are clear about this
  - ▢ What is the answer to the question?
  - ▢ What are your (3-6) key points?
- ▢ Re-read your work. For every sentence, ask yourself “what does this contribute to my answer **to the question?**”

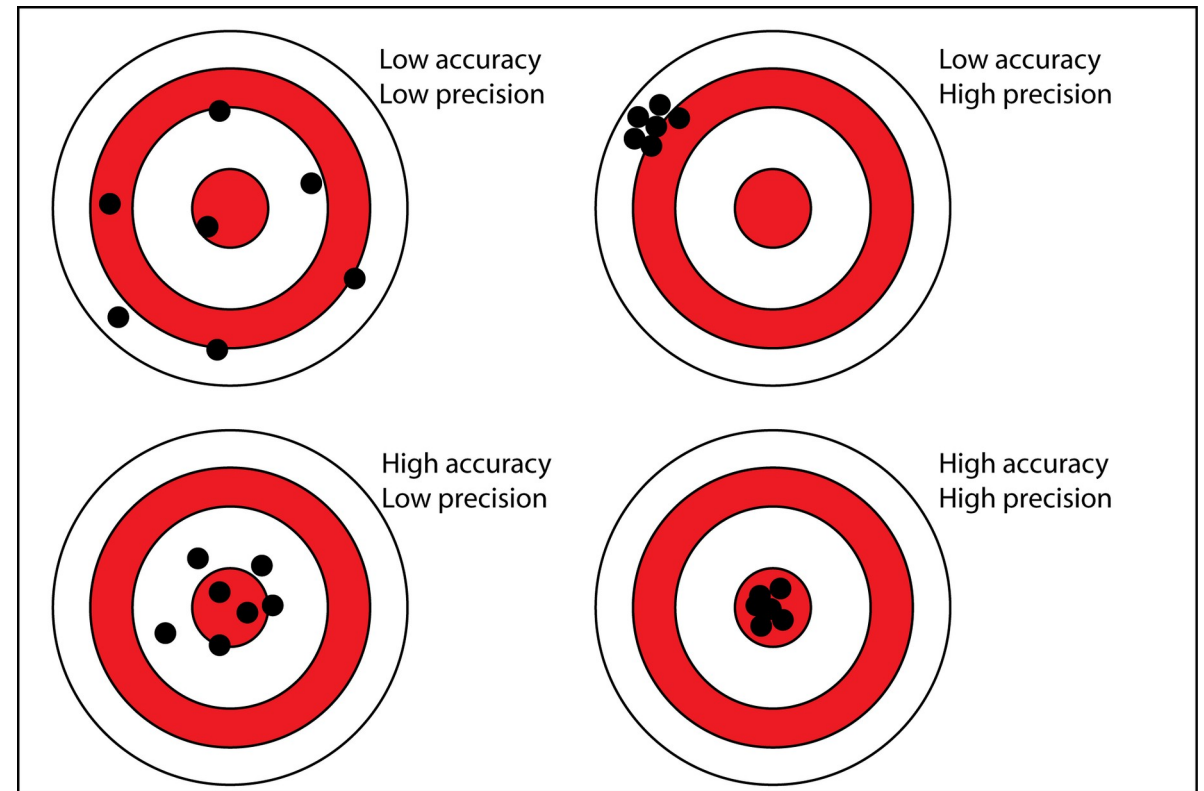
## Accurate (1)

- What's the difference between “accurate” and “precise”?

# Accurate (2)

1. Clarity in understanding
2. Clarity in language

Difficult to have #2 without #1



## Appropriately cautious

- ▮ It's rare to get definitive answers in scientific research.
- ▮ There are always limitations and these should be pointed out.
- ▮ Be cautious about the strength of all evidence (your data and the published literature).
- ▮ Appropriate caution shows complex understanding of your topic.

# So today...

- Structure:
  - Intro – theme – theme – theme – conclusion
  - Think about your reader's prior knowledge
  - Think about the story you want to tell
- Argumentation:
  - Say it clearly and back it up
- Writing:
  - Clarity

**Key takeaway: Follow the writing formula and you're most of the way there**

# Further reading

- Writing essays: [“Writing for Science Students” by Scott Ramsay and Jennifer Boyle](#)
- Writing style: [“The Sense of Style” by Steven Pinker](#)



# Contact details



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