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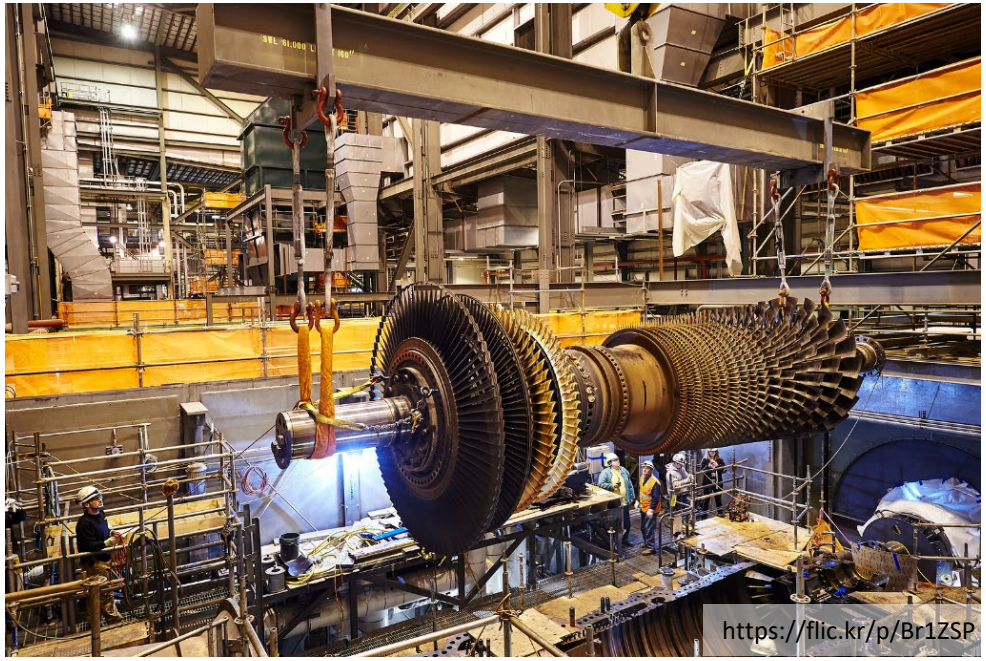
MPY 315/415
Report on practical training

Mr. Tlou Mokobodi	tlou.mokobodi@up.ac.za	Engineering 3, Office 6-81	MPY 315/415

Objectives of MPY 315/415



- Develop insight practical application
  - Engineering science in industry and Exposure
  - Human relationships and safety aspects.
- ECSA requires this type of experience in training of engineering students.
- MPY 315: 240 hours of vacation work performed and report written and submitted.
- MPY 415: 240 hours of vacation work performed and report written and submitted.
- MPY 315 and MPY 415 are compulsory for mechanical engineering students.

Report

- Student must submit report on work performed and experience gained.
- Motivation:
  - Student gains experience in preparation and writing of technical reports for MOX 410 and MRN 412/422, and Beyond
  - Allows employer and the University of Pretoria to evaluate nature and quality of student's work and effort put in to make training a success.

Interaction with the company

- Often student's first exposure to engineering environment
- Understand the company as a whole
- Brief introduction to company structure and activities recommended
- Exposure to organisation policy and culture
- Understanding company structure and hierarchy
- Contact with other employees
- Insight in project progress from planning to completion phase.
- Introduction to communication procedures (e.g. reports, forms, drawings)
- Responsibility and work allocation within the company

MPY 315

- 240 hours of work need performed in vacation period at the end of the 2nd year/start of the 3rd year (Or continuously during the year)
- Nature of work should allow student to obtain
  - Exposure to organisation policy and culture
  - A broadening of his/her knowledge of mechanical systems and processes as applied in real-world situations
  - Opportunity to work with artisans and experience their work environment
  - Broader knowledge on human relations within the organisation.

MPY 315

Recommendation for MPY 315:

- Student should work with an artisan than can answer questions and give guidance.
- Exposure to several types of tasks is recommended. Examples include maintenance, manufacture, assembly, administration, fabrication, construction, management and troubleshooting.

NB: During this period, student must study available literature on personnel management. Short report on personnel management as experienced in the working environment must be written.

MPY 415

- 240 hours of work performed in vacation period at the end of the 3rd year/start of the 4th year.

Recommendation for MPY 415:

- Perform small mechanical engineering project(s) which will bring him or her into wide contact with company's **technology**, **procedures** and **personnel**.
- Project should fall within scope of technological ability as supported by subject matter of the first three (3) academic years.
- A mechanical engineering mentor should be assigned to the student (Or experienced technical employee)

MPY 415

NB: In addition to the project described above, student is required to assess work environment with reference to Occupational Health Safety Act.

As students have very little experience in these areas, they are instructed to discuss opinions with their mentors and no one else.

Students are required to prepare confidential reports on their findings and submit to mentors for evaluation and comments.

Schedule and work tempo

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- Important for students to be kept busy in meaningful manner
- Reasonable access to mentor for advice
- Recommendation: Frequent appointments with mentor (e.g. 10 minutes per day) to discuss
  - Technical progress
  - Project progress
  - Record keeping and documentation
  - Planning and progress with preparation of technical report

The material covered in this section is closely related to the material covered in MJJ 210

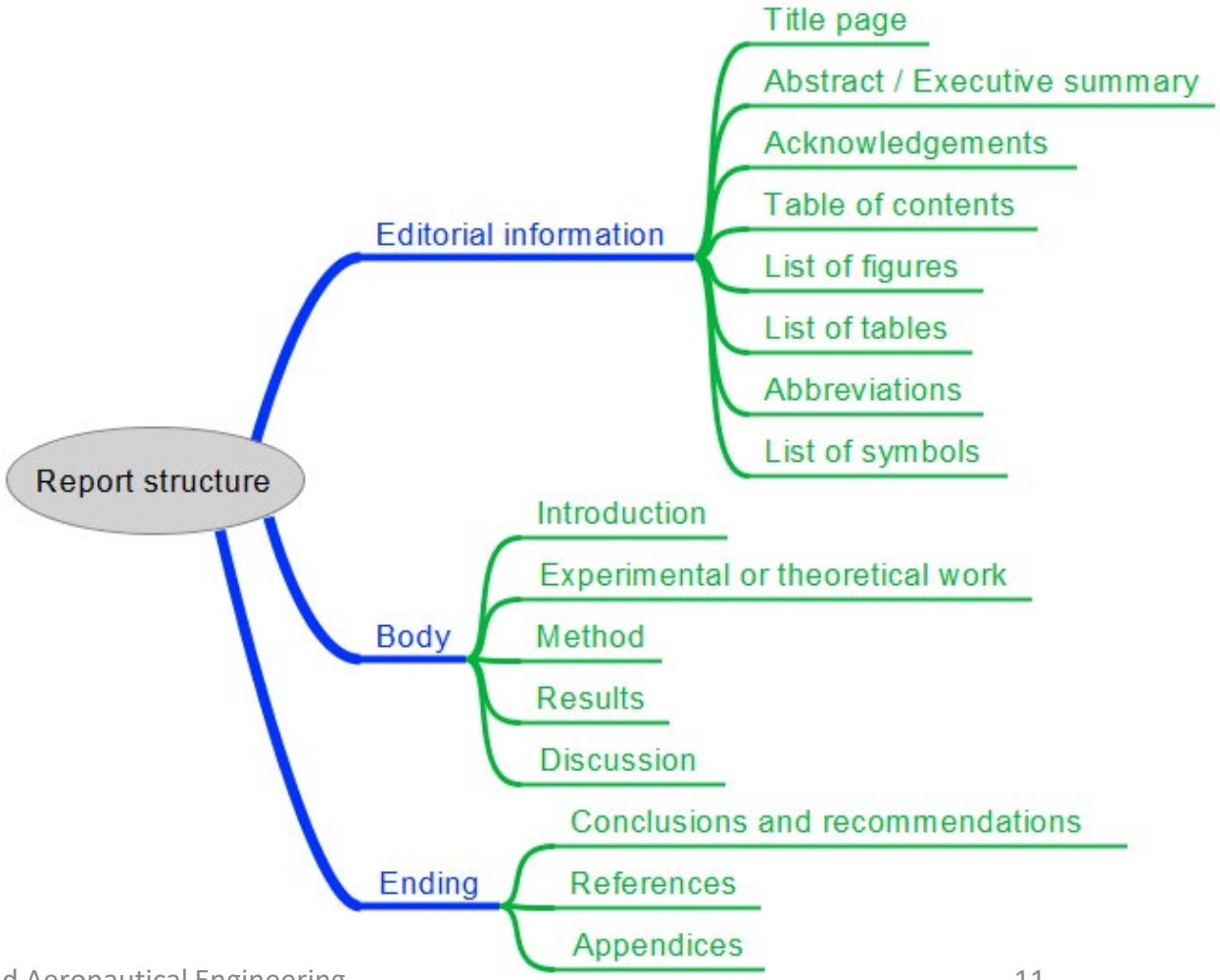
GENERAL REPORT AND SPECIFIC REPORT STRUCTURE

GENERAL REPORT

Report writing

- General
  - Formatted on A4
  - Written in third person

- Overall report structure

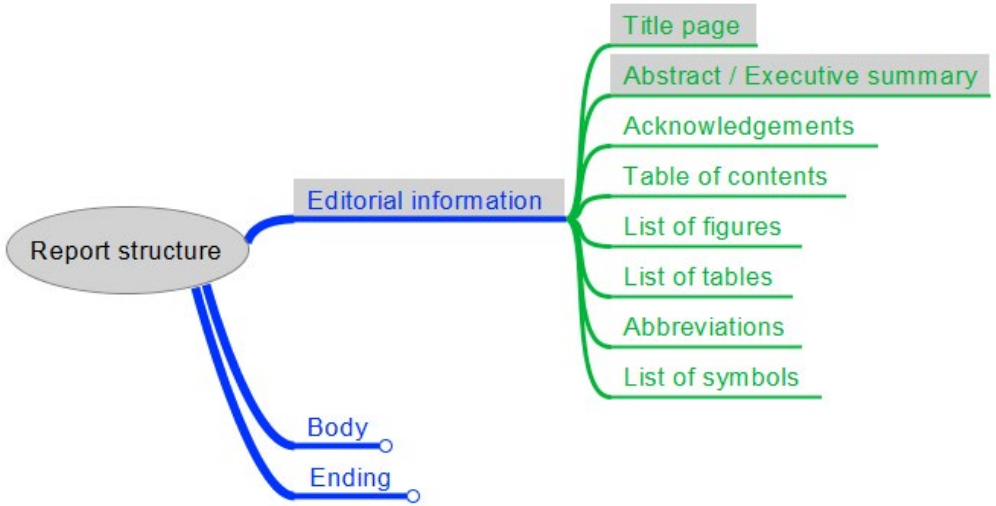


Typical structure of a technical report

From MJJ 210 (Professional and Technical Communication)

- Title page
  - Full identification of what the report is about
  - Name of author and date of release

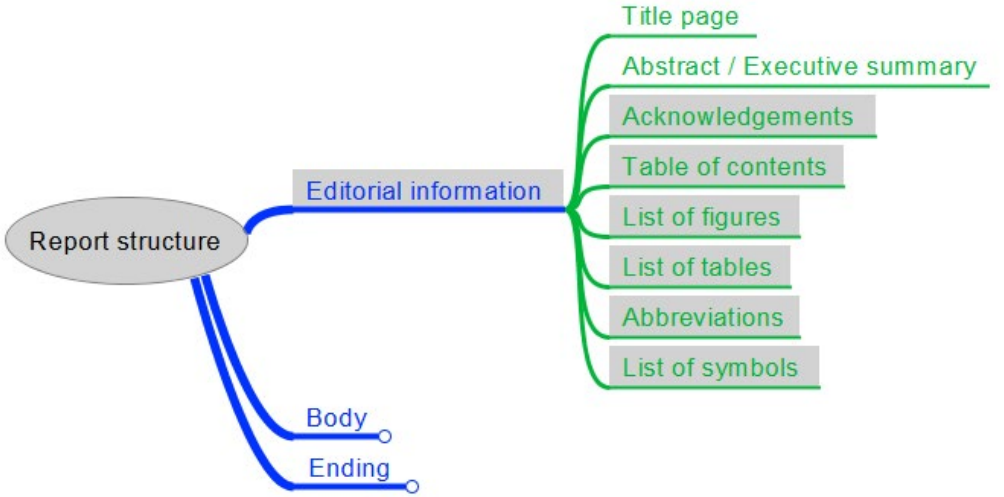
- Abstract or executive summary
  - Summarise most important points
  - Answers the following questions
    - What was the problem?
    - Why was the work done?
    - How was it done?
    - What were the results?
    - What are the conclusions?



Typical structure of a technical report

From MJJ 210 (Professional and Technical Communication)

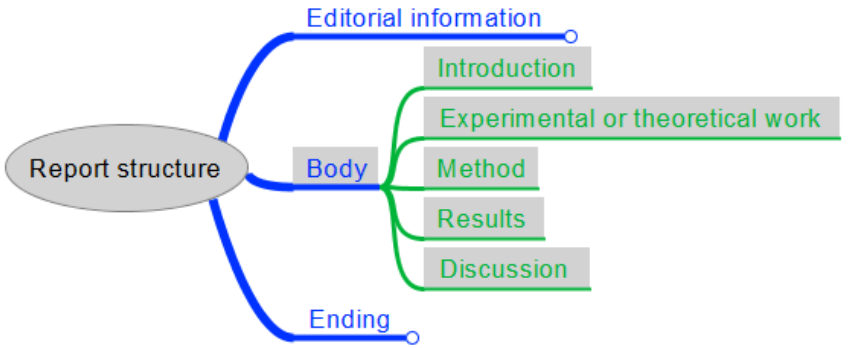
- Acknowledgements
  - All people that contributed to report or work
- Table of contents
- List of figures
- List of tables
- Abbreviations
- List of symbols



Typical structure of a technical report

From MJJ 210 (Professional and Technical Communication)

- **Introduction**
  - Reasons behind document and objectives of work
- **Experimental or theoretical work***
  - Overview of experimental test-rig or analysis work and software used
- **Method***
  - Procedure followed during experiments/analyses. Use diagrams
- **Results***
  - Use tables and figures to summarise the results. Include raw results in Appendix if necessary.
- **Discussion**
  - All results should be discussed and explained



*These titles may vary between reports; they depend on the nature of the work.

Typical structure of a technical report

From MJJ 210 (Professional and Technical Communication)

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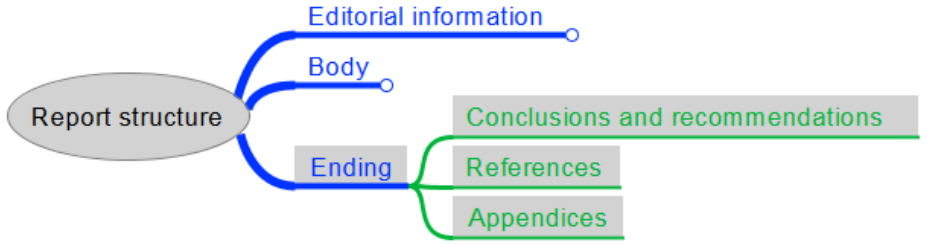
- Conclusions and recommendations
- References
  - The detailed information of all in text-references should be included in the references section
  - Use the Harvard referencing system.
  - https://libraryguides.vu.edu.au/ld.php?content_id=26290222

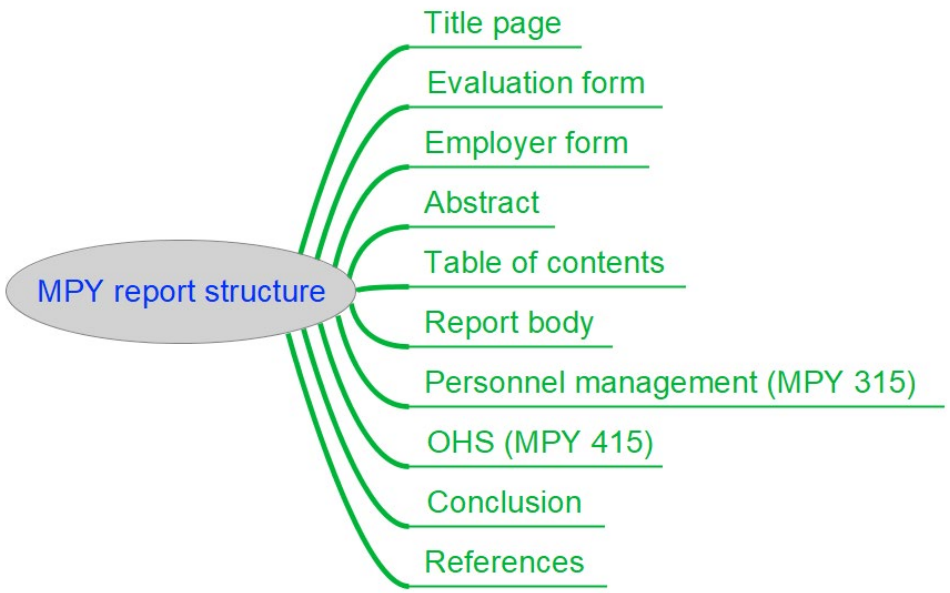


SPECIFIC REPORT (MPY 315 and 415)

Required structure of MPY 315/415 reports

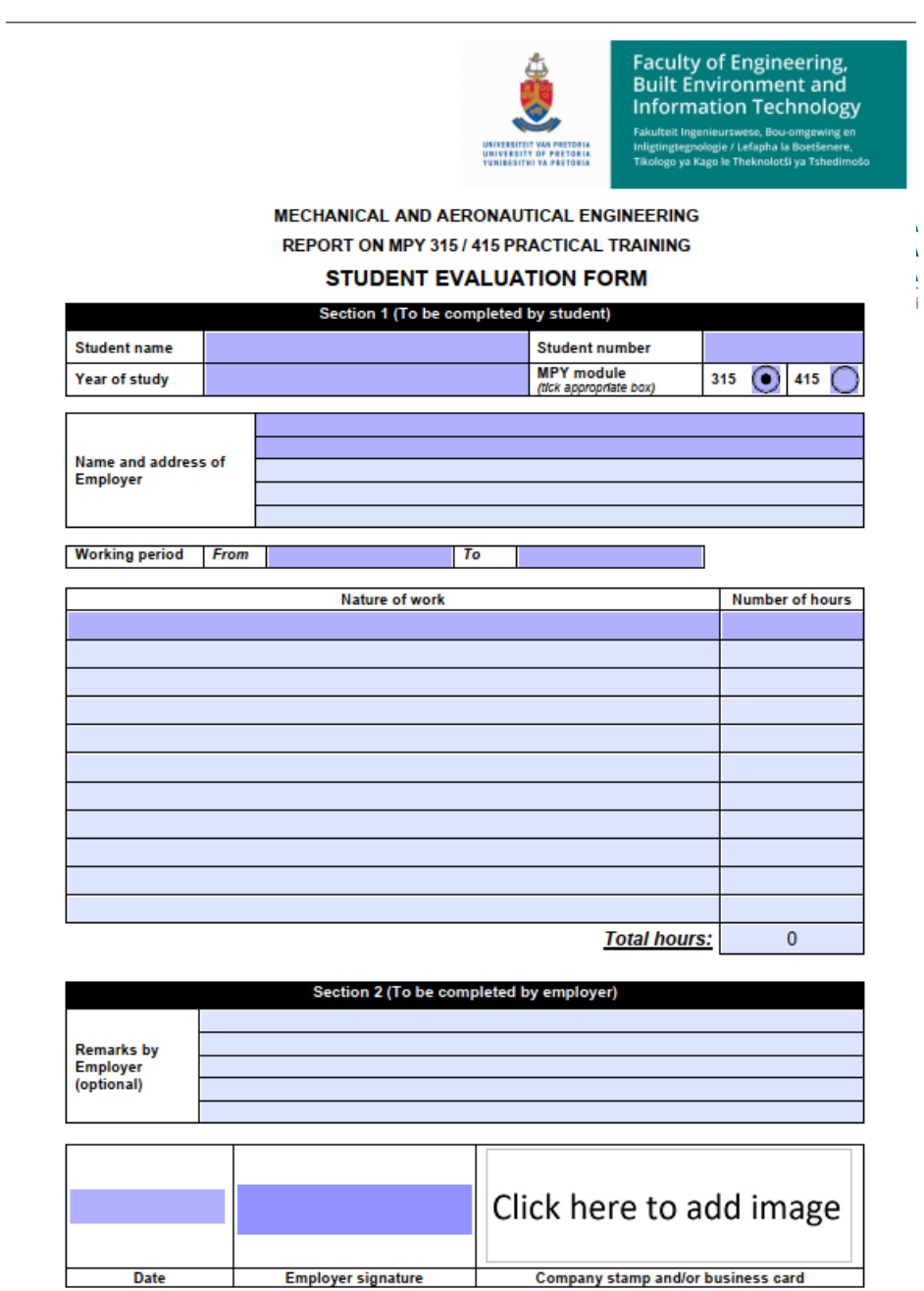
(Template on click-UP)

1. Title page
   - Name
   - Student Number
   - MPY X15: Practical Training
   - Any other relevant information
2. Plagiarism form
3. Employer forms: Filled in, signed and stamped
4. Abstract
5. Table of contents
6. Report body
7. Your Personnel management (MPY 315) or OHS (MPY 415) chapter
8. Conclusion
9. References



Employer form

- Needs to be completed in full
- If the number of hours were filled in for each task, then also include the total number of hours
- Old Form can be submitted.



Faculty of Engineering, Built Environment and Information Technology

MECHANICAL AND AERONAUTICAL ENGINEERING

REPORT ON MPY 315 / 415 PRACTICAL TRAINING

STUDENT EVALUATION FORM

Section 1 (To be completed by student)					
Student name		Student number			
Year of study		MPY module *(tick appropriate box)*	315 ◉	415 ○	

Name and address of Employer	

Working period	*From*		*To*	

Nature of work	Number of hours
Total hours:	0

Section 2 (To be completed by employer)	
Remarks by Employer (optional)	

		Click here to add image
Date	Employer signature	Company stamp and/or business card

MARKING RUBRIC

Rubric for MPY 315 & MPY 415 practical report							
	Traits / Components		Criteria	Levels of Performance			
				Does not comply	Inadequate	Sufficient	Exemplary
				Rating Scale			
				0	0	0	1
Subsection 1	Employer form	33.00%		No employer form(s)	Incomplete form(s)	Insufficient hours completed after 2nd/ 3rd year of study	Fully compliant form(s)
				Rating Scale			
				0	0	1	1
Subsection 2	Organisation	9.00%	Write a well organised report	No title page, plagiarism form, abstract, table of contents, chapters, page numbers, figure/tables captions	Inadequate technical report. Not well-organised, with some critical aspects missing	Adequate organisation for a technical report. Small errors present and possibility of improvement	Perfect organisation
	Technical	12.50%	Illustrate and describe completed work	No description of the work that was completed	One or two pages describing the work and no supplementary figures, or work not suited for MPY	Several pages on the work that was completed	Very detailed illustration/description of the work that was completed. Clear pictures
	Language	12.50%	Use professional spelling and grammar	Errors in every sentence	Error in each paragraph	Error on each page	Flawless document
				Rating Scale			
				0	0	1	1
Subsection 3	PM (MPY 315)	33.00%	Demonstrate understanding of PM	No PM/OHS section	One/two paragraphs and no pictures	Shows adequate understanding of PM/OHS. Several paragrpahs and pictures.	Good comprehensive discussion. Pictures illustrate the important concepts.
	OHS (MPY 415)		Demonstrate understanding of OHS				

- Students need to pass each sub-section to pass the module

Evaluation

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- Marks will be released with:
  - 996: unsatisfactory
  - 997: satisfactory
- In case of an unsatisfactory (996) result, the student must resubmit the updated report
- Instructions will be sent to the students

Typical mistakes

- Language
  - Report written in first person
- Figures and tables
  - Figures and tables do not have numbers
  - Figures and tables not referenced in text
  - Captions are not sufficiently descriptive
- Equations
  - No equation numbers
  - Symbols not defined in text
- Layout
  - Sections missing
  - Large empty spaces
  - Text is not justified

Identify the mistakes

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See the figure below for a logo of the university of pretoria.

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Illustration 1: Logo.

Identify the mistakes

See the figure below for a logo of the university of pretoria.

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Illustration 1: Logo.

- *Provide the figure number.*
- *Spelling: Pretoria.*
- *It should be Figure not Illustration.*
- *The captions should be descriptive*

Identify the mistakes

The equation below relates the displacement of a spring to the applied force.

$$F = k\,x \quad (1)$$

Identify the mistakes

The equation below relates the displacement of a spring to the applied force.

$$F = k\,x \quad (1)$$

- *All equations should be numbered and correctly aligned and all the variables in the equations should be properly defined.*

Identify the mistakes

Chapter 1: Introdction

I am a Mechanical Engineering student. Mechanical engineering students must gain **240** hours of industrial experience at the end of their 2nd and 3rd years of study . The aim is to develop an insight in the practical application of engineering science in industry and the related human relationships and safety aspects. The Engineering Council of South Africa requires this type of experience in the training of engineering students. Ideally, the student's work should cover:

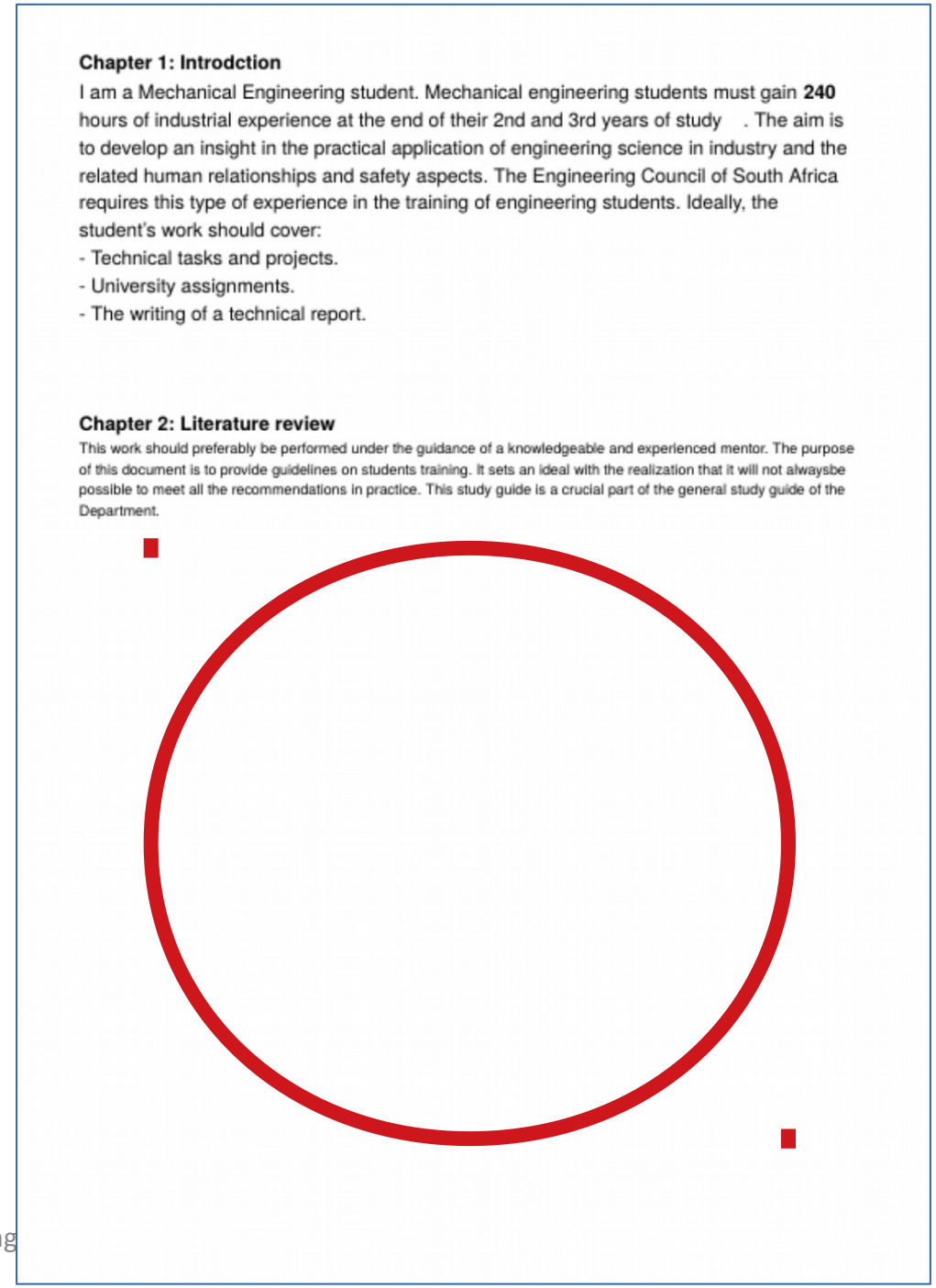
- Technical tasks and projects.
- University assignments.
- The writing of a technical report.

Chapter 2: Literature review

This work should preferably be performed under the guidance of a knowledgeable and experienced mentor. The purpose of this document is to provide guidelines on students training. It sets an ideal with the realization that it will not alwaysbe possible to meet all the recommendations in practice. This study guide is a crucial part of the general study guide of the Department.

Identify the mistakes

- *Large open spaces only allowed at end of chapters*
- *Pages are not numbered*



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- *Inconsistent font size.*
- *Chapters should start on new pages.*
- *Only write in third person.*
- *Spelling errors.*
- *Text should be justified.*

Resources

- Use grammar and spell checkers (GRAMMARLY)
- Use reference managers
  - Automated bibliography and in-text referencing
- Use automated numbering in word processing software
  - Outline numbering
  - Figures, tables, equations
  - Automated population and updating of table of contents, list of figures, list of tables
- Use cross-referencing in word processing software
  - Automated updating of table, figure, equation and heading numbers

SUBMISSION DATES:

There are multiple submission dates throughout the year.

- Submission will be through turnitin on Click-UP.
- The link will be made available on click-up.

- FREQUENTLY ASKED QUESTIONS

Frequently asked questions

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When should students register for the MPY 315/415 modules?

- Student admin suggests that you register for the module in the academic year you intend to submit.
- This ensures that the student
  - Has access to clickUP page
  - Is on the system when marks are allocated
- Not required to register for the module to be eligible to work. Only required to register when intending to submit.
- Submissions are done on clickUP. To be able to submit, you need to be a registered student for the course.

Frequently asked questions

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If I work for more than 240 hours for MPY315, can my excess hours carry over into MPY415?

No. The purpose of MPY is not to work 480 hours in total, but to contribute to your education.

MPY415 is typically done at the end of the third year, so that you can do a small engineering project, utilising some of the theory you have learned so far during your B.Eng course.

Frequently asked questions

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Is it possible to work at more than one company during the 6-week vacation work period?

This is not recommended. Purpose of 6 weeks vacation work is for you to contribute in a meaningful way to the company.

The first two weeks you usually go through induction or are introduced to the company.

If you split the vacation work period into more than one company, you quickly dilute the value you get from the experience.

Further questions

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- Send email
  - Indicate MPY315 or MPY415 in the subject and include your student number

tlou.mokobodi@up.ac.za

Final remarks

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- MPY gives valuable industrial exposure
- Make the most of the opportunity
- You stand to benefit immensely from this experience
- Take responsibility for and ownership of your practical training
- Possible identification of potential candidates.

THANK YOU