Department of Mechanical and Aeronautical Engineering

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MPY 315/415

Report on practical training

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Engineering 1, Office 10-20

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Objective of MPY 315/415

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.

240 hours of vacation work needs to be performed for MPY 315 and 240 hours of vacation work needs to be performed for MPY 415, whereafter a report needs to be written.

Report

The student must submit a report on the work performed and experience gained.

Motivation:

- The student gains experience in the preparation of writing a technical report.
- It allows the employer and the University of Pretoria to evaluate the nature and quality of the student's work and the effort he or she has put in to make the training a success.

Interaction with the company

- Exposure to organisation policy and culture.
- Understanding the company structure and hierarchy.
- Contact with other employees.
- Insight in project progress from planning phase to completion.
- Introduction to communication procedures (e.g. reports, forms, drawings).

MPY 315

240 hours of work need to be performed in the vacation period at the end of the second year/start of the third year.

- Exposure to organisation policy and culture.
- A broadening of his/her knowledge of mechanical systems and processes.
- The opportunity to work with artisans and experience the environment they work in.
- A broader knowledge on human relations

Recommendation for MPY 315:
It is recommended that the student works with an artisan than can answer questions and give guidance. Exposure to several types of tasks is recommended. Examples are maintenance, manufacture, assembly and troubleshooting.

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

MPY 415

240 hours of work need to be performed in the vacation period at the end of the third year/start of the fourth year.

Recommendation for MPY 415:

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

MPY 415 (continued)

- **NB:** In addition to the project described above, the student is required to assess the work environment with reference to the Occupational Health Safety Act. As the students have very little experience in these areas they are instructed to discuss their opinions with their mentors and no one else. Students are required to prepare confidential reports on their findings and submit this to their mentors for evaluation and comments.

Schedule and work tempo

- Important for students to be kept busy.
- Reasonably access to his/her 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 the preparation of technical report

Report writing

- The report must be written on A4 paper, printed on one side only.
- The report should be written in third person.

Typical structure of a technical report

From MJJ 210 (Professional and Technical Communication) notes of Prof. Slabber

- Title page:
  Full identification is given of what the report is about together with the name(s) of the author(s) and the date of release.

- Abstract or executive summary:
  This should be written in a way which summarizes the most important points in a way as to enable the reader to evaluate whether he would like to read the report in detail.

  It should provide brief answers to the following questions:
  - What was the problem?
  - Why was the work done to solve the problem?
  - How was it done?
  - What were the results?
  - What are the conclusions?

Typical structure of a technical report

Adapted from MJJ 210 (Professional and Technical Communication) notes of Prof. Slabber

- Acknowledgements

Acknowledge all of the people that made a contribution to the report or the work.

- Table of contents
- List of figures
- List of tables
- Abbreviations
- List of symbols

- **Typical structure of a technical report**

- Introduction:
  Reasons behind document and objectives of work.

- Experimental or theoretical work *:
  An overview of the experimental test-rig or analysis work and software that was used.

- Method *:
  The procedure that was followed during the 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

- Conclusions and recommendations

- References
  The detailed information of all in text-references should be included in the references section.

  Use the Harvard referencing system.
  http://library.curtin.edu.au./referencing/harvard.pdf

Remember to include the following in your report:

- Your Personnel management (MPY 315) or OHS (MPY 415) chapter.
- Your employer's form: Filled in, signed and stamped.
- Your Plagiarism form: Signed
- Your evaluation form

Required structure of MPY 315/415 reports

- Title page
  - Name
  - Student Number
  - MPY X15: Practical Training
  - Any other relevant information
- Evaluation form
- Employer forms: Filled in, signed and stamped
- Abstract
- Table of contents
- ....
- Your Personnel management (MPY 315) or OHS (MPY 415) chapter.
- Conclusion
- References

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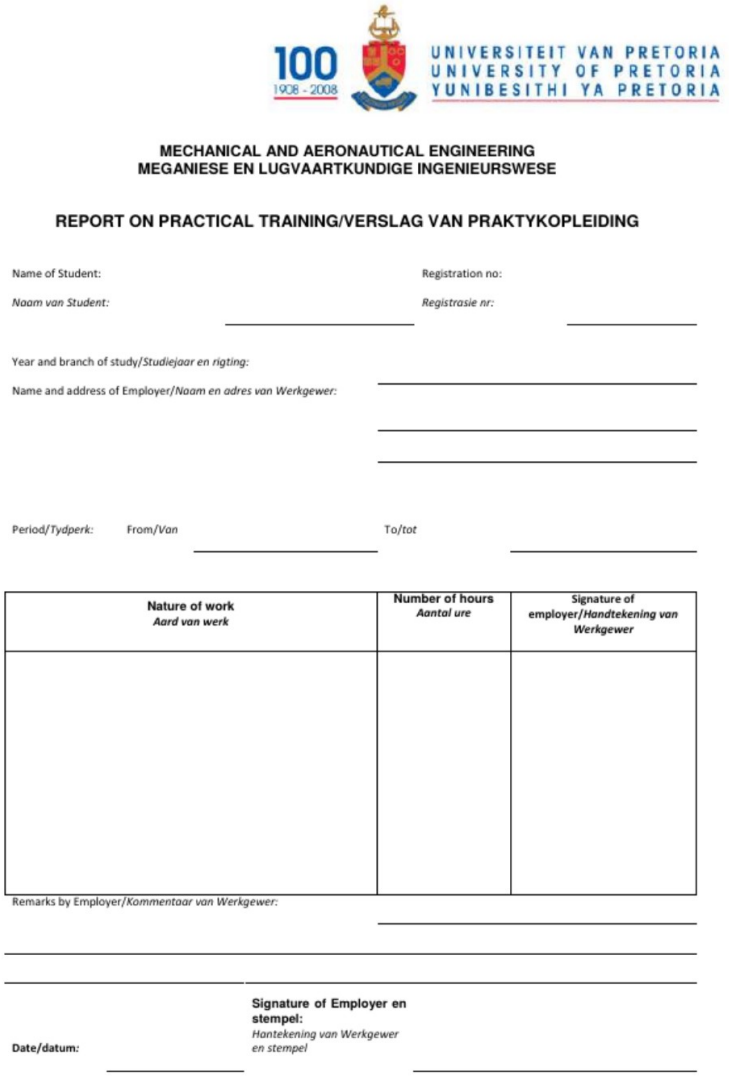
Employer form

- This needs to be completed in full.
- If the number of hours were filled in for each task, th also include the total number of hours



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MECHANICAL AND AERONAUTICAL ENGINEERING
MEGANIESE EN LUGVAARTKUNDIGE INGENIEURSWESE

REPORT ON PRACTICAL TRAINING/VERSLAG VAN PRAKTYKOPLEIDING

Name of Student: Registration no:
Naam van Student: *Registrasie nr:*

Year and branch of study/*Studiejaar en rigting:*

Name and address of Employer/*Naam en adres van Werkgewer:*

Period/*Tydperk:* From/*Van* To/*tot*

Nature of work *Aard van werk*	Number of hours *Aantal ure*	Signature of employer/*Handtekening van Werkgewer*

Remarks by Employer/*Kommentaar van Werkgewer:*

Date/datum:

Signature of Employer en stempel:
Hantekening van Werkgewer en stempel

Evaluation

Naam en Van/*Name and Surname*					
Studentenommer/*Student number*					
Nota / ***Note***	**ASPEK/** ***TOPIC***	**UIT/** ***OUT OF***	**PUNT/** ***MARK***	**Ja /** ***Yes***	**Nee /** ***No***
1	Organisering van materiaal / *Organisation of material*	15			
2	Tegniese versorging / *Technical impression*	25			
3	Taalversorging / *Language*	25			
4	Algemene versorging / *General impression*	15			
	Subtotaal / *Sub-total*	80		√	x
5	Verslag oor Personeelbestuur/Beroepsveiligheid *Report on Personnel Management/Health and safety*	20		√	x
TOTAAL / *TOTAL*		**100**			

Students need to pass the sub-totals to pass the module.

Evaluation

- Marks will be released with:
  - 996: unsatisfactory
  - 997: satisfactory

- In case of unsatisfactory (996) result, the student must resubmit the
  - Old report
  - New report
  - Evaluation sheet

Instructions will be sent to the students.

Typical mistakes

- Language
  - Report is written in first person
- Equations
  - Equations do not have equation numbers.
  - The symbols are not defined in text.
- Figures and tables
  - The figures and tables do not have numbers.
  - The figures and tables are not referenced in text.
  - The captions are not sufficiently descriptive.
- Layout
  - Sections missing
  - Large empty spaces
  - The text is not justified

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Identify mistakes in the following picture:

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

UNIVERSITEIT VAN PRETORIA
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YUNIBESITHI YA PRETORIA

Illustration 1: Logo.

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Illustration 1: Logo.

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

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

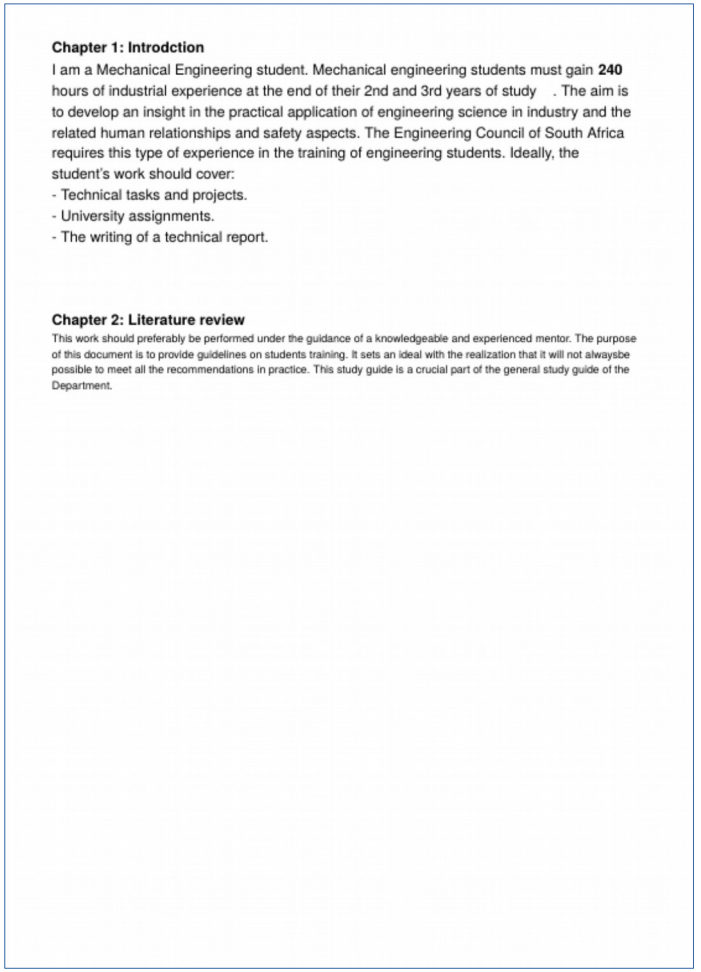
$$F = k\,x \quad (1)$$

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 mistakes in the following picture:



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.

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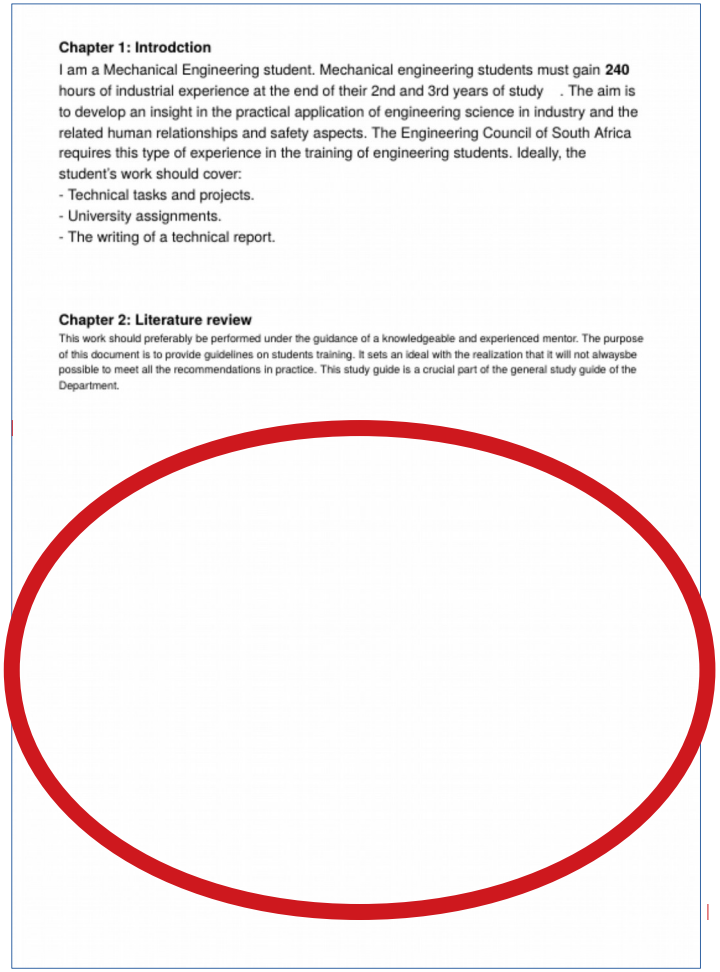

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Large open spaces are only allowed at the end of a chapter.

The pages are not numbered.

Identify mistakes in the following picture:

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

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Frequently asked questions

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

It is suggested by student admin that you should register for the module in the academic year you intend to submit. This is to ensure that you have access to the clickUP page and that you are on the system when allocating the marks. You do not have to register for the module to be eligible to work, you only need to register if you intend to submit. The submissions are currently done on clickUP and therefore to be able to submit you need to be a registered student for the course.

There are usually two hand-in opportunities:
- End of February – this is the primary submission opportunity.
- End of August.

The exact dates will be communicated via clickUP, the departmental website and/or email.

Where can you find information about MPY 315/415?

- On clickUP – most updated.

- If you do not have clickUP access, you can find the documents on the department's website: https://www.up.ac.za/mechanical-and-aeronautical-engineering/article/48728/practical-training