

MPY 315/415 **Report on practical training**

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Engineering 3



Objectives of MPY 315/415

- Develop insight practical application
 - Engineering science in industry
 - 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 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.
 - 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 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 phase to completion
- Introduction to communication procedures (e.g. reports, forms, drawings)





 240 hours of work need performed in vacation period at the end of the 2nd year/start of the 3rd 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
 - Opportunity to work with artisans and experience the environment they work in
 - Broader knowledge on human relations



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 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.



• 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.







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

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



- 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



Submission



- There are usually two hand-in opportunities:
 - End of April this is the primary submission opportunity.
 - End of September.
- 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 up to date.
 - If you do not have clickUP access, you can find the documents on the department's website:
 - <u>https://www.up.ac.za/mechanical-and-aeronautical-</u> engineering/article/48728/practical-training





MPY 315/415 Report on practical training *Typical structure of a technical report*

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Report writing

- General
 - Formatted on A4
 - Written in third person
- Overall report structure



Title page Full identification of what the report is about

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

Typical structure of a technical report

- 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?



Ending





Typical structure of a technical report

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

- 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) notes of Prof. Slabber

- 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. Department of Mechanical and Aeronautical Engineering





Typical structure of a technical report

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

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





MPY 315/415 Denkleiers • Leadina Minds • Dikaopolo tša Dihlale Report on practical training Required structure of MPY 315/415 report

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Department of Mechanical and Aeronautical Engineering



Required structure of MPY 315/415 reports 🌷

- 1. Title page
 - Name
 - Student Number
 - MPY X15: Practical Training
 - Any other relevant information
- 2. Evaluation 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



YUNIBESITHI YA PRETORIA

Denkleiers • Leading Minds • Dikgopolo tša Dihlalef



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

REPORT ON PRA	CTICAL TRAINING	VERSLAG VAN PR	AKTYKOPLEIDING
Name of Student:		Registration	no:
Naam van Student:		Registrasie n	<i></i>
Year and branch of study/Studiejaar	en rigting:		
Name and address of Employer/Naa	m en adres van Werkgewer:	-	
Period/Tydperk: From/Van		To/tot	
		Number of Lease	
Nature of work Aard van werk		Aantal ure	employer/Handtekening var Werkgewer
Remarks by Employer/Kommentaar	van Werkgewer:		



Evaluation

Naam e	n Van/ <i>Name and Surname</i>				
Student	enommer/Student number				
Nota /	ASPEK/TOPIC	UIT/	PUNT/	Ja /	Nee /
Note		OUT OF	MARK	Yes	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		V	x
5	Verslag oor Personeelbestuur/Beroepsveiligheid Report on Personnel Management/Health and safety	20		~	x
TOTAAL /	TOTAL	100			

• Students need to pass each sub-total to pass the module





Evaluation

- Marks will be released with:
 - 996: unsatisfactory
 - 997: satisfactory
- In case of unsatisfactory (996) result, student must resubmit
 - Old report
 - New report
 - Evaluation sheet
- 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



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



UNIVERSITEIT VAN PRETORIA UNIVERSITY OF PRETORIA YUNIBESITHI YA PRETORIA

Illustration 1: Logo.





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

- 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 (1)





The equation below relates the displacement of a spring to the applied force. F = k x (1)

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



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.

• Large open spaces only allowed at end of chapters

Pages are not numbered

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- new pages.
- Only write in third person.

Inconsistent font size.

- Spelling errors.
- Text should be justified.



Resources

- Use grammar and spell checkers
- 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





MPY 315/415 Report on practical training *Frequently asked questions*

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Frequently asked questions



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



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



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

- Complete survey or send email
- Question and Answer session





Final remarks

- 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

