

Mathematics Refresher Course

What is the motivation for the refresher course?

The lecturers at the NWU are continually attempting to improve their service to students. During recent years students have experienced escalating problems with the transition from school to university, especially concerning Mathematics. The School for Mathematical Sciences has decided that from 2011 the refresher course in mathematics will be compulsory for main stream mathematics students.

Who must attend the refresher course?

All bona fide first year students enrolled for programs which contain the module WISN111 or MATE111 must attend the refresher course. This implies that all engineering and BMI students, but only BSc, BCom, BA students enrolled for the module WISN111 and BEd students with Education Mathematics as mayor subject, have to attend. Students who are repeating the module WISN111, BCom students enrolled for WISN112/123, and BSc students enrolled for WISN113, are exempted from the refresher course. Students repeating the module WISN111 are strongly recommended to attend the refresher course. See the attached list of programs that contain the module WISN111 or MATE111.

When is the refresher course presented?

The refresher course is presented during the "O&B" period with the consent and cooperation of the student dean and the members of the HC's of the various hostels. Please note that the dates chosen for the refresher course will not coincide with important activities during the "O&B" period. The course will be presented in the lecture halls of G1, Potchefstroom campus, NWU and the exact dates and time will be announced as soon as it is available.

What is the cost of the refresher course?

The fees for the refresher course are R450 and include the cost of the study material. The amount will be added to the relevant student accounts. The study material will be distributed during the registration period.

Which topics will be addressed in the refresher course?

The following topics will be addressed: solving exponential and logarithmic equations, solving trigonometric equations in radians, absolute value function, limits and continuity, rules of differentiation, and graphs of polynomials and rational functions. The 2014 workbook that was used during the 2014 Refresher course is available electronically on the internet (<http://goo.gl/CPCX1w>). It can be downloaded and worked through beforehand.

Who are exempted from the refresher course?

Before the commencement of the refresher course, during the "O&B" period, a Mathematics test will be written by all students enrolled for programmes in the attached list. The test will be written in the lecture halls of G1 (Natural Sciences building), Potchefstroom campus, NWU and the exact date and time will be announced as soon as it is available. All students have to report at the foyer of G1 (Natural Sciences building). Bring a HB pencil and rubber with (calculator is optional – you don't really need it). In the test certain basic mathematical ideas/concepts which were taught at school and which are important for Mathematics at university level, are tested. No specific preparation for the test is necessary. All students that attain 80% or more in the test are exempted from the course. All other students are compelled to attend the refresher course.

What else can be done to prepare for Mathematics at university level?

A **workbook** (*Unimaths Intro workbook* written by Christopher Mills, ISBN 978-1-920663-01-8) is available at most academic book shops. It covers all new mathematical topics learned at university in the first year. It is written at a level so that you can work through it during your matric year. It will certainly help you to overcome the gap between school mathematics and university mathematics and will serve as a guide during your first year of university mathematics. A **survival guide** (*Math Review Manual* of McMaster University, <http://ms.mcmaster.ca/lovric/rm.html>) is available electronically on the internet. It can be downloaded and worked through beforehand. It has a summary of all the work done at school that is important for university mathematics. Any of the persons below may be contacted and they will send you the survival guide electronically. This guide will help you to be better prepared for Mathematics at university level and is very handy to have close by during the year. Specifically, read the introductory part.

Who may I contact for any further information?

Natural Sciences, Engineering and Economics
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Students admitted to the following programs have to attend the refresher course:

- Faculty of Engineering (I103P, I104P, I203P, I204P, I303P)
- Faculty of Natural Sciences
 - Physical and Chemical Sciences
 - Chemistry and Physics (N151P)
 - Chemistry, Mathematics and Applied Mathematics (N152P)
 - Physics and Mathematics (N154P)
 - Physics and Applied Mathematics (N155P)
 - Biochemistry and Chemistry (N174P)
 - Chemistry and Physiology (N177P)
 - Biochemistry and Physiology (N179P)
 - Computer and Mathematical Sciences
 - Physics and Computer Science (N153P)
 - Computer Science and Statistics (N156P)
 - Computer Science and Mathematics (N157P)
 - Statistics and Mathematics (N158P)
 - Mathematics (N159P)
 - Computer Science and Economics (N175P)
 - Mathematics and Economics (N176P)
 - Information Technology and Computer Science (N150P)
 - Environment- and Biological Sciences
 - Botany and Chemistry (N149P)
 - Zoology and Biochemistry (N160P)
 - Zoology and Chemistry (N161P)
 - Microbiology and Biochemistry (N167P)
 - Microbiology and Chemistry (N168P)
 - Botany and Biochemistry (N170P)
 - Geology and Chemistry (N180P)
 - BWI
 - Quantitative Risk Management (N134P)
 - Financial Mathematics (N135P)
 - Data mining (N136P)
 - Actuarial Science (N137P)
 - Urban and Regional Planning (N183P)
- Faculty of Health Sciences
 - Physiology and Biochemistry (G301P)
 - Psychology and Computer and Information Systems (G305P)
 - Psychology and Mathematics (G306P)
- Faculty of Arts
 - Mathematics and History (L329P)
 - Ethics, Philosophy and Mathematics (L338P)
 - Language Technology with Computer Science (L425P)
 - Any BA with Mathematics as choice
- Faculty of Economical Sciences
 - Economics, Risk management and Investment management (E342P)
- Faculty of Education Sciences
 - BEd Snr/FET Mathematics for Education (O194P)
 - BEd Int/Snr Mathematics for Education (O194P)
- Students appointed by the Admission office or Faculty Manager to attend the course for possible admission.