



**NAMIBIA UNIVERSITY**  
OF SCIENCE AND TECHNOLOGY

13 Jackson Kaujeua Street  
Private Bag 13388  
Windhoek  
NAMIBIA

T: +264 61 207 2081  
F: +264 61 207 9081  
E: [coll@nust.na](mailto:coll@nust.na)  
W: [www.nust.na](http://www.nust.na)

**Centre for Open and Lifelong Learning**

# **FEEDBACK TUTORIAL LETTER**

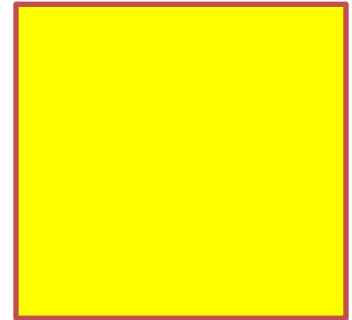
## **1<sup>st</sup> SEMESTER 2020**

### **ASSIGNMENT 1**

### **BASIC MATHEMATICS** **BMS411S**



Course Name: **BASIC MATHEMATICS**  
Course Code: **BMS411S**  
Department: **MATHEMATICS AND STATISTICS**  
Course Duration: **ONE SEMESTER**  
NQF Level and Credit: **NQF LEVEL 4 AND CREDIT 12**



### COMMUNICATION WITH YOUR MARKER-TUTOR

#### Contact with tutors for academic matters

The names and contact details of tutors will be available upon registration, as part of your **DE Pocket Guide**. Tutors should only be contacted in connection with **academic matters** relating to your course. Please make sure before contacting your tutor, that you know exactly what you are seeking assistance for. Always have your questions and study guide at hand when phoning.

**Please sms your tutor to arrange a telephonic/WebEx tutorial**

Your marker-tutor for **BASIC MATHEMATICS**

Tel.: **061 207 2938**

E-mail: **jamunyela@nust.na**



Your moderator for **ADD COURSE NAME HERE**

Tel.: **telephone number here**

E-mail: **email address here**

Moderator to insert this information

Your content-editor for **ADD COURSE NAME HERE**

Tel.: **telephone number here**

E-mail: **email address here**

Content-Editor to insert this information



## COLL HYPERLINKS

**COLL ANNOUNCEMENTS:** <http://www.nust.na/?q=centres/coll/coll-announcement>

**COLL STUDENT SUPPORT:** <http://www.nust.na/?q=centres/coll/student-support>

**E-LEARNING:** <http://elearning.nust.na/elearn/>

**ASSIGNMENT SUBMISSION:** [collassignments@nust.na](mailto:collassignments@nust.na)

**ASSIGNMENT DUE DATES:** Information Manual for Distance Education Students (DE Manual), Available from <http://www.nust.na/?q=centres/coll/about-coll>

**NUST's Policies and Regulations:** <http://www.nust.na/?q=download/annual-reports-documents> |

- **Dates for 1<sup>st</sup>, 2<sup>nd</sup> Opportunity/ Supplementary Examination:** To be announced on the NUST webpage.

**MASSIVE OPEN ONLINE COURSE – MOOC** - <http://tlu.nust.na/survey/index.php/419328/lang-en>

Username: **nust**

Password: **123**

**WebEx:** <https://vc.uc.nust.na/orion/login>

**NUST Writing Unit:** Tel: 061 – 2072383

Email: [writingunit@nust.na](mailto:writingunit@nust.na)

**NUST Mathematics Tutoring Centre:** Tel: 061 – 2072523/2072913

Website: <http://mathstutoring.nust.na>

**TurnItIn:** [www.turnitin.com](http://www.turnitin.com)



## STATEMENT ABOUT ACADEMIC HONESTY AND INTEGRITY

All staff and students of Namibia University of Science and Technology (NUST), upon signing their employment contracts and registration forms, commit themselves to abide by the policies and rules of the institution. The core activity of NUST is learning and in this respect academic honesty and integrity is very important to ensure that learning is valid, reliable and credible.

NUST therefore does not condone any form of academic dishonesty, including plagiarism and cheating on tests and assessments, amongst other such practices. NUST requires students to always do their own assignments and to produce their own academic work, unless given a group assignment.

Academic Dishonesty includes, but is not limited to:

- Using the ideas, words, works or inventions of someone else as if it is your own work.
- Using the direct words of someone else without quotation marks, even if it is referenced.
- Copying from writings (books, articles, webpages, other students' assignments, etc.), published or unpublished, without referencing.
- Syndication of a piece of work, all or part of an assignment, by a group of students, unless the assignment was a legitimate group assignment.
- The borrowing and use of another person's assignment, with or without their knowledge or permission.
- Infringing copyright, including documents copied or cut and pasted from the internet.
- Asking someone else to prepare an assignment for you or to write or sit an assessment for you, whether this is against payment or not.
- Re-submitting work done already for another course or programme as new work, so-called self-plagiarism.
- Bringing notes into an examination or test venue, regardless of whether the notes were used to copy or not.
- Receiving any outside assistance in any form or shape during an examination or test.

All forms of academic dishonesty are viewed as misconduct under NUST Student Rules and Regulations. Students who make themselves guilty of academic dishonesty will be brought before a Disciplinary Committee and may be suspended from studying for a certain time or may be expelled. All students who are found guilty of academic dishonesty shall have an appropriate endorsement on their academic record, which will never be erased.



Dear Student

**INTRODUCTORY NOTES**

Below are few comments about some of questions. Read these comments carefully and let them guide you in preparing for the forth-coming end of semester examination.

- Generally, some students continue to give answers with the aid of a calculator and as a result do not show the steps leading to the answer. The steps leading to your answers are more important than just the answers. Moreover, you could gain marks for method even when the answer you came up with is incorrect. Therefore, it is recommended that you show all calculations.
- In some cases, inconsistencies were observed. Answers arising from inconsistent work do not attract any marks.

**INSTRUCTIONS/REQUIREMENTS FOR ASSIGNMENTS**

- **Attempt all questions for the assignments**
- **Assignments should be typed and submitted via e-learning platform**
- **Clearly show all your work**
- **Similar works attract zero mark for both two parties involved**

**ASSIGNMENT 1**

Due date for Assignment 01:.....

My Marker-tutor for this course is: JONAS AMUNYELA

Tel. no.:061 207 2938

Email address: jamunyela@nust.na

**My Student Support Officer for this course is: (PLEASE COMPLETE THIS PART!)**



TUTORIAL LETTER  
SEMESTER 1/2020

"COURSE NAME" BASIC MATHEMATICS  
"COURSE CODE" BMS411S

Tel. no.: \_\_\_\_\_

Email address: \_\_\_\_\_



**Address for emailed assignments:** [collassignments@nust.na](mailto:collassignments@nust.na)

Students may send assignments via e-mail. Students should download the Electronic Assignment Book available in MSWord format from <http://www.nust.na/?q=centres/coll/about-coll> to complete assignments. Ensure that all information as requested on the assignment cover is completed and correct.

**Incorrect or incomplete information will prevent it from being accepted for marking.**

After completion of the assignment, email the Electronic Assignment Book as an attachment to: [collassignments@nust.na](mailto:collassignments@nust.na)

Further note that students are allowed to submit late assignments, based on valid documentary evidence as per rule DE12 (b) of the COLL Yearbook 2018, provided late assignments are **submitted within 7 days (including public holidays and weekends) after the due date of the assignment.**

**ASSIGNMENT 01**

**This assignment covers unit 1 to 4**





**Question 1 [35 Marks]**

1.1 A DJ gave away a \$50 gift voucher for every 50<sup>th</sup> caller. Every 15<sup>th</sup> caller received free concert tickets.

1.1.1 How many callers must get through before one of them receives both a gift voucher and a concert ticket? [4]

LCM for 50 and 15

$$50 = 2 \times 5^2 \checkmark$$

$$15 = 3 \times 5 \checkmark$$

$$LCM = 2 \times 3 \times 5^2 \checkmark$$

= 150 callers must get through before one of them receives both a gift voucher and a concert ticket ✓

1.2 Simplify each of the following and leave answer in standard form to 3 decimal places.

**Hint:** Perform your calculation with numbers in standard form

1.2.1  $(2.08 \times 10^{-4})(9.5 \times 10^{-4})$  [3]

$$= (2.08 \times 9.5) \times 10^{-4-4}$$

$$= (19.76 \times 10^{-8}) \checkmark$$

$$= (1.976 \checkmark \times 10^{-7} \checkmark)$$

1.2.2  $\frac{8 \times 10^{-6}}{8.25 \times 10^{-2}}$  [3]

$$= \frac{8}{8.25} \times 10^{-6+2}$$

$$= 0.9697 \times 10^{-4} \checkmark$$

$$= 9.697 \checkmark \times 10^{-5} \checkmark$$

1.3 Simplify the following expressions:

1.3.1  $\frac{4}{3} \div \frac{1}{3} - \frac{4}{5} \div \frac{1}{5} + \frac{1}{2}$  [3]

$$= \frac{4}{3} \times \frac{3}{1} - \frac{4}{5} \times \frac{5}{1} + \frac{1}{2} \checkmark$$





$$= 4 - 4 + \frac{1}{2} \checkmark$$

$$= \frac{1}{2} \checkmark$$

**1.3.2**  $\frac{3}{38} \times \frac{19}{18} \div -\frac{1}{12}$  [3]

$$= \frac{3}{38} \times \frac{19}{18} \times -\frac{12}{1} \checkmark$$

$$= \frac{-684}{684} \checkmark$$

$$= -1 \checkmark$$

**1.4** Simplify the following expressions. Show all the steps to get full marks

**1.4.1**  $\sqrt{64x^8y^{24}}$  [3]

$$= 2^3x^4y^{12}$$

$$= 8 \checkmark x^4 \checkmark y^{12} \checkmark$$

**1.4.2**  $4x^2y^3 \frac{2}{3x}$  if  $x = -2$  and  $y = -1$  [3]

$$= \frac{8xy^3}{3} \text{ award full marks for correct answer without simplifying expression}$$

$$= \frac{8(-2)(-1)^3}{3} \checkmark$$

$$= 5\frac{1}{3} \checkmark \checkmark$$

**1.4.3**  $-3(a - b)^2 + 3(a + b)^2$  [3]

$$= -3(a - b)(a - b) + 3(a + b)(a + b)$$

$$= -3[a^2 - ab - ab + b^2] + 3[a^2 + ab + ab + b^2]$$

$$= -3[a^2 - 2ab + b^2] + 3[a^2 + 2ab + b^2]$$

$$= -3a^2 + 6ab - 3b^2 \checkmark + 3a^2 + 6ab + 3b^2 \checkmark$$

$$= 12ab \checkmark$$

**1.4.4**  $-18 - 6y = 6(1 + 3y)$  [3]

$$-18 - 6y = 6 + 18y$$

$$-18 - 6 - 6y - 18y = 0$$



$$-24 - 24y = 0$$

$$-24y \checkmark = 24 \checkmark$$

$$y = -1 \checkmark$$

$$1.4.5 \quad \frac{1}{n-5} - 1 = \frac{4}{n-5} \quad [3]$$

*multiplying through by the lcm (n - 5)*

$$1 - (n - 5) = 4 \checkmark$$

$$1 - n + 5 = 4$$

$$-n = 4 - 5 - 1$$

$$-n = -2 \checkmark$$

$$n = 2 \checkmark$$

$$1.4.6 \quad \frac{3}{w^2} = \frac{w-4}{3w^2} + \frac{2}{3w^2} \quad [4]$$

*multiplying through by the lcm = 3w<sup>2</sup>*

$$\frac{3(3w^2)}{w^2} = \frac{3w^2(w-4)}{3w^2} + \frac{2(3w^2)}{3w^2} \checkmark$$

$$9 = w - 4 + 2$$

$$\checkmark 9 + 2 = w \checkmark$$

$$w = 11 \checkmark$$

### **Question 2 [15 Marks]**

2.1 Simplify by factorizing completely each of the following expressions

$$2.1.1 \quad -18m^2 + 10m \quad [3]$$

$$= -2m \checkmark (9m \checkmark - 5 \checkmark)$$

$$2.1.2 \quad \frac{3x^2+6x+3x+6}{(x+10)(3x+3)} \quad [4]$$

$$= \frac{3x(x+2)+3(x+2)}{(x+10)(3x+3)}$$

$$= \frac{(3x+3)(x+2) \checkmark}{(x+10)(3x+3) \checkmark}$$



$$= \frac{(x+2) \checkmark}{(x+10) \checkmark}$$

$$2.1.3 \quad \frac{7y+6}{70y+60} \div \frac{1}{y+8} \quad [3]$$

$$= \frac{7y+6}{10(7y+6)} \times \frac{y+8}{1} \checkmark$$

$$= \frac{y+8 \checkmark}{10 \checkmark}$$

$$2.1.4 \quad \frac{ax-ay+bx-by}{ax-ay-bx+by} \quad [5]$$

$$= \frac{a(x-y)+b(x-y) \checkmark}{a(x-y)-b(x-y) \checkmark}$$

$$= \frac{(a+b)(x-y) \checkmark}{(a-b)(x-y) \checkmark}$$

$$= \frac{(a+b) \checkmark}{(a-b) \checkmark}$$

### **Question 3 [13 Marks]**

3.1 Frans bought 6 reams of printing paper at Pep store and paid a total of N\$173.85. The VAT on her purchase was N\$ 24.85.

3.1.1 Express the above statement as an equation in terms of  $x$  [3]

*Let  $x$  be the cost per ream VAT inclusive* ✓

$$6x \checkmark = 173.85 \checkmark$$

3.1.2 Find the value of  $x$  [1]

$$6x = 173.85$$

$$x = 28.98 \checkmark$$

*Each ream cost N\$28.98*

3.2 Tobias went to the Windhoek show with his friends. The tickets costs N\$30.50 per person, and each person received a student discount of N\$5.00. The total amount paid for all the tickets was N\$523.50.



3.2.1 Express the above statement as an equation in terms of  $t$  [3]

Let  $t$  be the total number of students who went for the show ✓

$$25.50t ✓ = 523.50 ✓$$

3.3 Solve the following linear equations

3.3.1  $\frac{x+1}{2} + \frac{x-1}{3} = \frac{1}{6}$  [3]

$$\Rightarrow \frac{6(x+1)}{2} + \frac{6(x-1)}{3} = 1$$

$$\Rightarrow 3(x+1) + 2(x-1) = 1 ✓$$

$$\Rightarrow 3x + 3 + 2x - 2 = 1$$

$$\Rightarrow 5x + 1 = 1$$

$$\Rightarrow 5x = 0 ✓$$

$$\Rightarrow x = 0 ✓$$

3.3.2  $\frac{4}{1-x} = \frac{3}{1+x}$  [3]

$$\Rightarrow 4(1+x) = 3(1-x) ✓$$

$$\Rightarrow 4 + 4x = 3 - 3x$$

$$\Rightarrow 4x + 3x = 3 - 4$$

$$\Rightarrow 7x = -1 ✓$$

$$\Rightarrow x = -\frac{1}{7} ✓$$

\*\*\*\*\*END OF ASSIGNMENT 1\*\*\*\*\*

Total marks 63 |