FOUNDATION PROGRAM | MATH UNIT

COURSE SYLLABUS

TERM-1 (2020-2021)

Course Title : **INTERMEDIATE ALGEBRA**

Course Code : **FPM 102B – Level 2 – APPLIED**

Teaching Load : **Five (4) hours weekly**

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Recommended Text Book:

1) Algebra for Cllege Students: Jerome Kaufmann, Karen L. Schwitter, Thomson Brooks/Cole, year 2007, 10th Edition.
2) e–text book: Algebra and Trigonometry, 6th Edition, Margaret L. Lial, John Hornsby, David I. Schneider, Callie Daniels, My lab Math - Pearson

DU – Vision:

Dhofar University aspires to occupy a recognized position among the institutions of quality higher education.

DU – Mission:

Dhofar University strives to achieve excellence in teaching, research and community service, in an open learning environment conducive to creativity and innovation and to the acquisition of cutting-edge professional knowledge.

DU - Values:

The core values of Dhofar University are:

1. Academic excellence
2. Individual responsibility
3. Continuous improvement
4. Active citizenship
5. Long-Life learning

▫ رؤية البرنامج :

يتطلع البرنامج التأسيسي إلى احتلال مكانة مرموقة بين البرامج التأسيسية في السلطنة من خلال توفير تعليم ذات جودة عالية

▫ رسالة البرنامج :

يسعى البرنامج التأسيسي لتزويد الطلبة بتعليم ذات جودة عالية يستند الى معايير المخرجات التعليمة في بيئة تشجع على التميز و التعلم المستمر.

▫ قيم البرنامج :

- التميز الأكاديمي
- تحمل المسؤولية الفردية
- تحسين القدرات الذاتية باستمرار
- المواطنة الفاعلة
- التعلم المستمر

Learning Objectives:

* Acquiring the knowledge necessary for further study of mathematics at higher levels and for pursuing the study of other curricular subjects.

* Mastering the language of mathematics and using it to solve real-life problems that may face students now or in the future.

* Enhancing students' intellectual abilities and self-confidence, and encouraging renovation and innovation by allowing them to uncover relationships and conceive mathematical patterns and models.

* Developing the mathematical sense in students and employing mathematical methods in life and in other subjects.

Learning Outcomes:

At the end of the Course, the students will be able to:

- Define a function graphically and by set notation, finding the domain of certain type of functions, and evaluating functions.
- Graph quadratic functions with standard formula.
- Identify exponential functions, draw their graphs, and solve their equations.
- Define the logarithmic functions, draw their graphs, and solve their equations.
- Use the relationship between exponents and logarithms to solve related problems.
- Use the three types of symmetry of an equation to sketch its graph.
- Identify central tendency measures, mean, median, mode, midrange and finding the probability of random experiments.
- Use formulas for permutations and combinations.

Academic Honesty:

Students are expected to complete all work with the highest standard of honesty and integrity. Plagiarism, forgery, cheating or any form of academic misconduct will not be tolerated. Any of the above may cause a student's final course grade to be lowered significantly or the student may receive a failing grade, depending on the severity of the offence. Plagiarism is the presentation of the work of another as one's own work.
(Refer to DU Catalogue)

Plagiarism:

Plagiarism is a particular form of cheating and you must avoid it at all costs. Any case of plagiarism will be given zero in that section of assessment.

Class Management:

- Students are required to arrive to all classes on time.
- Use of mobile phone is not allowed during the lecture time. You must, therefore, switch off your mobile phone before you enter the lecture room.

Attendance Regulation:

Level	1st warning Hours of absences	2nd warning Hours of absences	Final warning Hours of absences	Withdrawal
Math 1 & 2	7.15 %	14.2 %	21.43	25.1 %

Students will receive copies of warning letters in their DU email.

Evaluation and Grading:

Exams will be introduced on Moodle.
An Interactive Math Platform (My Lab Math from Pearson) will be integrated with Moodle to be applied within CA.

Quiz-1	Mid Term	Quiz-2	Assignments	Final Exam	Exit Exam	Final Grade
10 %	30 %	10 %	10%	40 %	50 %	100 %

Continuous Assessment (CA) (30%):

Portfolio - Assignments	**10 %**
Quiz 1	**10 %**
Quiz 2	**10 %**

Useful Links / Websites:

1. **http://www.onlinemathlearning.com/relations-functions.html [video]**
2. **http://www.youtube.com/watch?v=5p2859SCzdM [video]**
3. **http://www.youtube.com/watch?v=6AVlDcLl_hs&feature=related [video– Square Root Function]**
4. **http://www.webmath.com/parabola3.html**
5. **http://www.youtube.com/watch?v=xp1TeBfkLPg [video]**
6. **http://www.youtube.com/watch?v=9xQopG2mZXo [Video]**
7. **http://www.youtube.com/watch?v=x60VwlBOBQA [video : Reflection of e^x like e^{-x} and $-e^x$]**

7. **http://www.wtamu.edu/academic/anns/mps/math/mathlab/beg_algebra/beg_alg_tut24_ineq.htm [Tutorial]**

Study Plan – Math (Level 2 Applied) – Topics to be covered during Term-1(2020-2021)

Weeks (Dates)	Topics to Be Covered	Remarks
Week 1 (06/09/20 – 10/09/20)	- Introduction to Online Classes **8.1** Concept of Functions	Through Moodle & What App groups.
Week 2 (13/09/20 – 17/09/20)	**8.1 Complete:** Concept of a Function.	8.1 Definition 8.1 p 405, Vertical–Line Test P 406, Examples: 1,5,6(a, b) P 406-409. Problems: (1-14), 15-16, 19, (57-59), (63-67) P.411-412.
Week 3 (20/09/20– 24/09/20)	**8.4** Graphing Quadratic function. (Determine the zeros, the maximum or minimum of a quadratic function, and line of symmetry).	8.4 Examples: 1,2. P:431 Problems: (1-8). p. 437
Week 4 (27/09/20– 01/10/20)	**7.5** Graphing Nonlinear Equations. (Use the three types of symmetry of an equation to sketch its graph.). **10.1.a** Graphing Exponential Function.	7.5 Examples 1,2 ,3 P 386-388. Problems: (6-20) P 391, 392. 10.2.a Problems: 39-44 p548. Quiz-1 10% (01/10/2020)
Week 5 (04/10/20– 08/10/20)	**10.2.a** Graphing Exponential Function with base e. **10.1.b** Solving Exponential Equations.	10.1.a Examples: 6,7 p.535. Problems: (27-30), (33-40) p538. 10.1.b Examples: (1-5) P 533-534. Problems: 1,3,5,7,9, 17,21 p. 538. 10.2.b Examples:1,3,4,5,6 p.540-545. Problems: 1(b. d, f), 2(a), (15-25) P 547.
Week 6 (11/10/20 – 15/10/20)	**Mid-Term Exam Week**	**Mid-Term Exam 30%**
Week 7 (18/10/20– 22/10/20)	**10.4** Logarithms (Definition, Properties and solving Logarithmic Equation).	10.4 Examples: (3-14) P 560-565 Problems: (1-5), (11-15), (21-32), (41-45), (51-55), (69-74), (81-85), (89-100) P. 566-567

Week 8 (25/10/20– 29/10/20)	**10.5** Understand the inverse relationship between exponents and logarithms. **10.6** Use the relationship between exponents and logarithms to solve related problems.	10.5 Example: 1 only pp.568-569. Problems: 42-46 p.573 10.6 Examples: 1,2,3,4 p. 575-576. Problems 1,3,5,7,9,13,15 ,19, (21-25) p. 581-582.
Week 9 (01/11/20– 05/11/20)	**10.2.b** Solve simple real-life problems involving exponential functions. (Compare simple and compound interest and relate compound interest to exponential growth).	10.2.b Examples:(1-6) p.540-545. Problems: (24,25,30,33,35) P 547. **Supplementary Material: use the following link of free resource:** https://tutorial.math.lamar.edu/Classes/Alg/ExpLogApplications.aspx **Quiz-2 10% (05/11/2020)**
Week 10 (08/11/20– 12/11/20)	**Statistics** **1.** Inferential Statistics, Summarize data into tables and simple graphs (bar charts, histogram, and pie chart)., **2.** Introduction to Descriptive statistics, mean, median, mode, and midrange.	. **Supplementary Material** **Supplementary Material**
Week 11 (15/11/20– 19/11/20)	**Probability** **1. Introduction to Probability, compute the probability of simple events using tree diagrams.** **2. Use formulas for permutations and combinations**	**Supplementary Material** **Supplementary Material**
Week 12 (21/11/20– 24/11/20)	**Final Exam Week**	**Final Exam 40 % + Exit Exam 50 %**
Week 13 (29/11/20– 01/12/20)	**Moderation &Finalizing Grades**	