

(Vision for the Future)

# **FOUNDATION PROGRAM**

# Course Syllabus FPM 102B: FP Math Level 2 Applied

# (A) University Vision, Mission and Values

# Vision

Dhofar University aspires to occupy a distinct position among the leading institutions of higher education in the Arab Region.

# Mission

To provide quality teaching and learning, conduct research in an inspiring environment conducive to creativity and innovation, and engage with the community.

#### Core Values

The core values of Dhofar University are:

- Excellence Our commitment to excellence drives us to do better consistently.
- Integrity We believe in honesty and coherence between our words and actions.
- **Responsibility** We accept full responsibility for our actions all the times.
- Commitment We are committed to give our best and deliver what we promise.
- Transparency For us, transparency is the foundation of trust.
- Adaptability We believe adaptability is the key to success in an ever-changing environment.

#### (B) Foundation Program Vision and Mission

#### Vision

Foundation Program aspires to become one of the leading GFPs in the Arab region, equipping students to be more competitive in colleges inside and outside Oman.

#### Mission

To expose students to rich, engaging curricula using innovative teaching and learning strategies that enable students to tap their learning potential to become autonomous, life-long learners

#### (C) Course/ Instructor/ Coordinator Information

| Course Code   | : | FPM 102B                       |
|---------------|---|--------------------------------|
| Course Title  | : | FP Math Level 2 Applied        |
| Credit Hours  | : | NA [4 Teaching Hours per week] |
| Pre-requisite | : | FP Math Level 1                |
| Co-requisite  | : | NA                             |
| Delivery Mode | : | Lecture/Tutorial               |

#### Course Schedule (For all sections):

| Section | Class<br>Room | Days   | Time            | Instructor<br>Name | Email | Office<br>Room | Office<br>Telephone |
|---------|---------------|--------|-----------------|--------------------|-------|----------------|---------------------|
| 1       | COMC<br>XXXA  | 2 (ST) | 08:00-<br>10:00 | TBD                | TBD   | FP<br>XXXA     | TBD                 |
| 2       | COMC<br>XXXA  | 2 (MW) | 10:00-<br>12:00 | TBD                | TBD   | FP<br>XXXA     | TBD                 |

| Course Coordinator | : | Mohammad Mustafa           |  |
|--------------------|---|----------------------------|--|
| Email              | : | <u>m_mustafa@du.edu.om</u> |  |
| Office Extension   | : | 7570                       |  |
| Office Room        | : | 224 A                      |  |

### (D) Course Description

The aim of this course is to prepare students for further study of higher-level mathematics at higher and other non-mathematics-related subjects. The course covers Concept of functions, Exponential and Logarithmic functions, and Recognizing three types of symmetric of functions, basic statistics, and introduction to probability.

### (E) Course Learning Outcomes:

|                      | Course Learning Outcomes  | Assessment Tools                         |  |  |
|----------------------|---|--|--|--|
| 1                    | Define a function graphically and by set notation, finding the domain of certain type of functions, and evaluating functions. | FA/ Quiz 1 / Summative/<br>Midterm       |  |  |
| 2                    | Graph quadratic functions by finding the vertex.  | FA / Quiz 1/ Summative/<br>Midterm       |  |  |
| 3                    | Determine if the graph of equation is symmetric to x-axis, y-axis, and origin   | FA / Assignment 1/<br>Summative/ Midterm |  |  |
| 4                    | Identify exponential functions, draw their graphs, and solve their equations.   | FA/ Assignment 1/<br>Summative/ Midterm  |  |  |
| 5                    | Define the logarithmic functions, draw their graphs, and solve their equations.   | FA / Quiz 2/ Summative/<br>Final         |  |  |
| 6                    | Use the relationship between exponents and logarithms to solve related problems.  | FA /Assignment 2/<br>Summative/ Final    |  |  |
| 7                    | Solve simple real-life problems involving exponential functions.  | FA / assignment<br>2/Summative / Final   |  |  |
| 8                    | Identify central tendency measures, mean, median, mode, midrange  | Summative/ Final                         |  |  |
| 9                    | Finding the probability of random experiments.  | Summative/ Final                         |  |  |
| 10                   | Use formulas for permutations and combinations.   | Summative/ Final                         |  |  |
| General Study Skills |   |  |  |  |
| 1                    | Time Management and Students' Responsibility  | FA / Quiz Skill                          |  |  |
| 2                    | Note Taking   | FA / Quiz Skill                          |  |  |
| 3                    | Research Skills   | FA / Quiz Skill                          |  |  |

#### (F) Program Learning Outcomes: Refer to Scope and Sequence Document

#### (G) Additional Materials, References and Resources

| Textbook 1)          | Algebra for College Students: Jerome Kaufmann, Karen L. Schwitter, Thomson<br>Brooks/Cole, 2007, 10 <sup>th</sup> Edition, ISBN 1-285- 19578-7 |
|----------------------|--|
| Reference Books      | NA   |
| Handouts             | Moodle, OneDrive, Math Worksheets  |
| Useful Websites      | Kuta Software  |
| Software(s)          | NA   |
| Other Resources      | PPT, videos  |
| e-learning Resources | Moodle, OneDrive   |

#### (H) Teaching/ Learning Strategies and Use of Technology/

The lecture would include tutorials; homework; assignments; in-class participation; and short quizzes. Students need to refer the textbooks and/or internet sites together with the handouts to update their knowledge and cope up with the assignments and other assessments. Regular class attendance is important and will be monitored. Students are expected to develop their skills for at least 4\_hours a week.

| Week No. | Topics/Activities to be Covered  |
|----------|--|
| 1        | Registration - Introduction and discussing Course syllabus   |
| 2        | Concept of a Function  |
| 3        | <ul> <li>Graphing Quadratic function. (Determine the zeros, the maximum or minimum of a<br/>quadratic function, and line of symmetry).</li> </ul>  |
|          | Quiz Study Skills 1: Time Management and Students' Responsibility  |
| 4        | <ul> <li>Graphing Nonlinear Equations. (Use the three types of symmetry of an equation to<br/>sketch its graph)</li> </ul>   |
| 5        | <ul> <li>Graphing Exponential Function.</li> <li>Graphing Exponential Function with base e.</li> </ul>   |
|          | Quiz Study Skill 2: Note Taking  |
| 6        | Solving Exponential Equations.   |
| 7        | Mid-Term Exam Week   |
| 8        | Logarithms (Definition, Properties and solving Logarithmic Equation).  |
| 9        | <ul> <li>Understand the inverse relationship between exponents and logarithms.</li> <li>Use the relationship between exponents and logarithms to solve related problems.</li> </ul>  |
| 10       | <ul> <li>Solve simple real-life problems involving exponential functions. (Compare simple and compound interest and relate compound interest to exponential growth).</li> <li>Statistics 1. Inferential Statistics, Summarize data into tables and simple graphs (bar charts, histogram, and pie chart).,</li> <li>2. Introduction to Descriptive statistics, mean, median, mode, and midrange.</li> </ul> |
|          | Quiz Study Skill 3: Research Skills  |
| 11       | <ul> <li>Probability - Introduction to Probability, compute the probability of simple events<br/>using tree diagrams.</li> </ul>   |
|          | Use formulas for permutations and combinations.  |
| 12       | Final Exam Week  |

# (I) Weekly Course Content Outline: Refer to Level 2 Applied study plans for specific details.

#### (J) Assessment Tools and Schedule

| Assessment Tools      | Grade Proportion | Week/Dates           |
|-----------------------|------------------|----------------------|
| Midterm exam          | 30%              | 7 <sup>th</sup> week |
| Continuous Assessment | 30%              | Ongoing in class     |
| Final Exam            | 40%              | End of Term          |
| Course Work Total     | 100%             |                      |
| Course work %         | 50%              |                      |
| Exit Exam             | 50%              |                      |
| Cumulative Total      | 100%             |                      |

#### (K) Important Information for Students

#### 1) University Academic Integrity Policy

The university requires its student to adhere to the academic integrity policy and avoid indulgences in the acts of cheating, collusion or plagiarism during examinations or continuous assessment. Any act of academic misconduct will invite sanctions as per DU policy.

(Please refer to DU student handbook and Academic Integrity Policy for detailed guidelines.)

#### 2) Class Attendance Rules

Attendance of all classes and course-related activities is obligatory. The maximum absences allowed for a student is 25% of the total number of classes of a particular course. Before reaching the withdrawal stage, LOGSIS warns the students by way of three warnings sent to their DU email account by DAR. This email messages to students is a formal communication of the university with its students so students are strongly advised to access their DU email accounts on daily basis to track their absences, along other important things, to respond appropriately when needed.

#### 3) The warnings of absences are as follows:

- a) **First warning**: this is when a student's absence reaches **07%** of the total number of classes of a particular course.
- b) **Second warning**: this is when a student's absence reaches **14%** of the total number of classes of a particular course.
- c) **Final warning:** this is when a student's absences reach **21%** of the total number of classes of a particular course.

If the absence crosses 25%, the student will be dismissed from the course and a "WA" will be shown in his/her transcript against the dismissed course and dismissal letter will be sent to his DU email account.

#### 4) Withdrawal from course. NA

#### 5) End-Term Evaluation by Students

All students are required to complete "Online Evaluation" of Course, Graduate Attributes and Course Instructor at the end of the term. The specific dates for evaluation shall be announced by the course instructor in the class. It is mandatory for the students to complete this online evaluation, without which their final grades shall not be announced.

#### 6) Additional information, if any

For the benefits of the group, all students are asked to participate actively in all aspects of the course. Those wishing to succeed must:

- Arrive on time and attend all classes.
- Complete all work on assigned dates.
- Complete all writing assignments on assigned dates.
- Take part in oral discussion and make presentations as assigned.
- Participate in class on a regular basis.
- Never miss quizzes, tests, presentations and other alternative assessments as they prepare you for your midterms and also finals.

Students are promoted to the college if their Cumulative Final Grade is 50 or above.

If a student misses any test (midterm/final), the student will only be given a make-up test with a valid excuse approved by the FPC.