

| GANPAT UNIVERSITY | | | | | | | | | |
|--|---|----|-----------------|--------------|----------------------------|---|----|-----|-------------|
| FACULTY OF ENGINEERING AND TECHNOLOGY (DIPLOMA PROGRAMMES) | | | | | | | | | |
| Programme | Diploma Programme | | | | Branch/Spec. | All | | | |
| Semester | I | | | | Version | 1.0.0.0 | | | |
| Effective from Academic Year | | | | 2018-19 | | Effective for the batch Admitted in : June-2018 | | | |
| Subject code | 1BS101 | | | Subject Name | Mathematics - I | | | | |
| Teaching scheme | | | | | Examination scheme (Marks) | | | | |
| (per week) | Lecture(DT) | | Practical(Lab.) | | Total | | CE | SEE | Total |
| | L | TU | P | TW | | | | | |
| Credit | 3 | 1 | - | - | 4 | Theory | 40 | 60 | 100 |
| Hours | 3 | 1 | - | - | 4 | Practical | - | - | - |
| Pre- requisite: | | | | | | | | | |
| <ul style="list-style-type: none"> • None | | | | | | | | | |
| Learning outcomes: | | | | | | | | | |
| <ul style="list-style-type: none"> • The subject is classified under Basic Sciences and students are intended to know about the basic concepts and principles of Mathematics as a tool to analyze the Engineering problems. • The course content should be taught so as to understand and perform the Engineering concepts and computations. • Mathematics has the potential to understand the core Technological studies. • Prepare him/her self for finding Area and Volume. | | | | | | | | | |
| Theory syllabus | | | | | | | | | |
| Unit | Content | | | | | | | | Hrs. |
| 1 | Determinants and Matrices: Idea of Determinant and related Examples, Definition ,Order $m \times n$, types of Matrices, Addition/Subtraction of Matrix, Product of Matrix, Adjoint and Inverse up to 3×3 matrix, Solution of Simultaneous Equations (up to three variables). | | | | | | | | 14 |
| 2 | Vectors: Basic concept of Vector, addition & subtraction of Vectors, Modulus vector , Unit vector and Direction of vectors, Angle between two vectors, Applications of Dot and Cross Product of Vectors, Work Done by Force. | | | | | | | | 12 |
| 3 | Logarithm: Concept ,Working Rules and related Examples, Logarithm Base changed rule and related Examples, Relation between Logarithm and Indices and related Examples | | | | | | | | 08 |
| 4 | Mensuration : Calculate the surface area of different shapes and bodies (Triangle, Square, Rectangle, Trapezium, Parallelogram, Rhombus and Circle) Calculate the Surface & Volume of different shapes and bodies Surface & Volume (Cuboids, Cone, Cylinder and Sphere) | | | | | | | | 08 |
| 5 | Trigonometry: Introduction of function, Solve simple problems using concepts of Trigonometry, Units of Angles(degree and radian), Allied & Compound Angles, Multiple –Submultiples angles, Graph of Sine and Cosine, Periodic function, sum and factor formulae, Inverse trigonometric function | | | | | | | | 18 |

Practical content:

Experiments/Practical/Tutorials/Simulations would be carried out based on syllabus

SUGGESTED LEARNING RESOURCES**List of Books**

| Sr.No | Title of Books | Author | Publication |
|--------------|---------------------------------------|-----------------|----------------------------------|
| 1 | Engineering Mathematics (3rd edition) | Anthony Croft | Pearson Education |
| 2 | Applied Mathematics | W. R. Neelkanth | Sapna Publication |
| 3 | Polytechnic mathematics | S.P. Deshpande | Pune Vidyarthi Gruh Prakashan |