

| DISCIPLINE:ALL BRANCH | SEMESTER: 2ND Sem | NAME OF THE TEACHING FACULTY: ABHILASH HOTA | | |
|---|---|--|------------------------------------|----------------|
| SUBJECT: ENGINEERING MATHEMATICS II | No of Days/Per week class allotted: 5 Class P/W(75) | Semester From Date:20/03/2023 To Date:27/06/2023 No. Of Weeks: 15 | | |
| WEEK | CLASS DAY | THEORY TOPICS <u>PART-1 (VECTOR ALGEBRA)</u> | REMARKS | |
| 1st | 1st | Introduction | Date | Dean/Principal |
| | 2nd | Types of vectors (null vector, parallel vector, collinear vectors) (in component form) | | |
| | 3rd | Types of vectors (null vector, parallel vector, collinear vectors) (in component form) | | |
| | 4th | Types of vectors (null vector, parallel vector, collinear vectors) (in component form) | | |
| | 5th | Representation of vector | | |
| | 2nd | 1st | Magnitude and direction of vectors | |
| 2nd | | Addition and subtraction of vectors | | |
| 3rd | | Position vector | | |
| 4th | | Scalar product of two vectors | | |

| | | | | |
|-----------------|-----------------|--|--|--|
| | 5 th | Geometrical meaning of dot product | | |
| 3 rd | 1 st | Angle between two vectors | | |
| | 2 nd | Scalar and vector projection of two vectors | | |
| | 3 rd | Scalar and vector projection of two vectors | | |
| | 4 th | Vector product and geometrical meaning (Area of triangle and parallelogram) | | |
| | 5 th | Vector product and geometrical meaning (Area of triangle and parallelogram) | | |
| 4 th | 1 st | <u>PART 2) LIMITS AND CONTINUITY :</u> Definition of function, based on set theory | | |
| | 2 nd | Types of functions | | |
| | 3 rd | Constant function | | |
| | 4 th | Identity function | | |
| | 5 th | Absolute value function | | |
| 5 th | 1 st | The Greatest integer function | | |
| | 2 nd | Trigonometric function | | |
| | 3 rd | Exponential function | | |

| | | | | |
|-----------------|-----------------|--|--|--|
| | 4 th | Logarithmic function | | |
| | 5 th | Existence of limit | | |
| 6 th | 1 st | Methods of evaluation of limit | | |
| | 2 nd | Definition of continuity of a function at a point and problems based on it | | |
| | 3 rd | <u>PART 3)</u> <u>DERIVATIVES:</u> Derivative of a function at a point | | |
| | 4 th | Derivative of a function at a point | | |
| | 5 th | Algebra of derivative | | |
| 7 th | 1 st | Algebra of derivative | | |
| | 2 nd | Algebra of derivative | | |
| | 3 rd | Derivative of standard functions | | |
| | 4 th | Derivative of standard functions | | |
| | 5 th | Derivative of standard functions | | |
| | 1 st | Derivative of composite function (Chain Rule) | | |
| | 2 nd | Derivative of composite function (Chain Rule) | | |

| | | | | |
|-----------------|-----------------|--|--|--|
| 8 th | 3 rd | e) Methods of differentiation of i) Parametric function ii) Implicit function iii) Logarithmic function | | |
| | 4 th | e) Methods of differentiation of i) Parametric function ii) Implicit function iii) Logarithmic function | | |
| | 5 th | e) Methods of differentiation of i) Parametric function ii) Implicit function | | |
| 9 th | 1 st | e) Methods of differentiation of i) Parametric function ii) Implicit function iii) Logarithmic function | | |
| | 2 nd | iv) a function with respect to another function | | |
| | 3 rd | iv) a function with respect to another function | | |
| | 4 th | iv) a function with respect to another function | | |
| | 5 th | f) Applications of Derivative i) Successive Differentiation (up to | | |
| | 1 st | f) Applications of Derivative i) Successive Differentiation (up to | | |

| | | | | |
|------------------|------------------|---|---------------------------------|--|
| 10 th | 2 nd | f) Applications of Derivative i) Successive Differentiation (up to second order) | | |
| | 3 rd | f) Applications of Derivative i) Successive Differentiation (up to | | |
| | 4 th | <u>PART 4)</u> <u>INTEGRATION :</u> Definition of integration as inverse of differentiation | | |
| | 5 th | Definition of integration as inverse of differentiation | | |
| | 11 th | 1 st | Integrals of standard functions | |
| 2 nd | | Integrals of standard functions | | |
| 3 rd | | Integrals of standard functions | | |
| 4 th | | c) Methods of integration i) Integration by substitution ii) Integration by parts | | |
| 5 th | | c) Methods of integration i) Integration by substitution ii) Integration by parts | | |

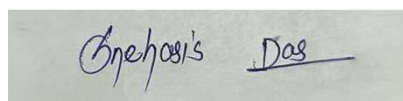
| | | | | |
|------------------|-----------------|--|--|--|
| 12 th | 1 st | c) Methods of integration i) Integration by substitution ii) Integration by parts | | |
| | 2 nd | Integration of some special functions. | | |
| | 3 rd | Integration of some special functions. | | |
| | 4 th | Integration of some special functions. | | |
| | 5 th | Definite integral, properties of definite integrals | | |
| 13 th | 1 st | Definite integral, properties of definite integrals | | |
| | 2 nd | Application of integration i) Area enclosed by a curve and X – axis ii) Area of a circle with centre at origin | | |
| | 3 rd | Application of integration i) Area enclosed by a curve and X – axis ii) Area of a circle with centre at origin | | |
| | 4 th | <u>PART 5)</u> <u>DIFFERENTIAL EQUATION</u> : Order and degree of a differential equation | | |
| | 5 th | Order and degree of a differential equation | | |

14th

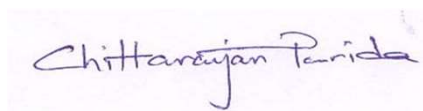
| | | | |
|-----------------|---|--|--|
| 1 st | Solution of differential equation i) 1st order and 1st degree equation by the method of separation of variables ii) Linear equation $dy/dx + py = Q$, where P,Q are functions of x | | |
| 2 nd | Solution of differential equation i) 1st order and 1st degree equation by the method of separation of variables ii) Linear equation $dy/dx + py = Q$, where P,Q are functions of x | | |
| 3 rd | Solution of differential equation i) 1st order and 1st degree equation by the | | |
| 4 th | Solution of differential equation i) 1st order and 1st degree equation by the method of separation of variables ii) Linear equation $dy/dx + py = Q$, where P,Q are functions of x | | |

| | | | | |
|------|-----------------|---|--|--|
| | 5 th | Solution of differential equation i) 1st order and 1st degree equation by the method of separation of variables ii) Linear equation $dy/dx + py = Q$, where P,Q are functions of x | | |
| 15th | 1 st | Solution of differential equation i) 1st order and 1st degree equation by the | | |
| | 2 nd | Solution of differential equation i) 1st order and 1st degree equation by the method of separation of variables ii) Linear equation $dy/dx + py = Q$, where P,Q are functions of x | | |
| | 3 rd | Solution of differential equation i) 1st order and 1st degree equation by the method of separation of variables ii) Linear equation $dy/dx + py = Q$, where P,Q are functions of x | | |

| | | | | |
|--|-----------------|---|--|--|
| | 4 th | Solution of differential equation i) 1st order and 1st degree equation by the method of separation of variables ii) Linear equation $dy/dx + py = Q$, where P,Q are functions of x | | |
| | 5 th | Solution of differential equation i) 1st order and 1st degree equation by the method of separation of variables ii) Linear equation $dy/dx + py = Q$, where P,Q are functions of x | | |



HOD



DEAN



PRINCIPAL